

THE
MEDICAL EXAMINER.

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NOTICE TO CORRESPONDENTS.

Communications and Books for notice should be addressed to the Editors, care of Messrs. Lindsay & Blakiston.

Letters, &c., connected with the *business affairs* of the Journal should be addressed to the Publishers.

Papers for publication must be received *before* the 16th of the month, or they cannot appear in the forthcoming number.

The following Journals have been received in exchange:

The Medical News and Library, February.

New Jersey Medical Reporter, ditto.

New York Medical Times, ditto.

American Medical Gazette, ditto.

American Medical Monthly, ditto.

Boston Medical and Surgical Journal. (Weekly.)

Buffalo Medical Journal, ditto.

Virginia Stethoscope, ditto.

Virginia Medical and Surgical Journal, ditto.

Charleston Medical Journal, January.

New Hampshire Journal of Medicine, January and February.

Montreal Medical Chronicle, February.

Nelson's American Lancet, ditto.

St. Louis Medical and Surgical Journal, January.

North-Western Medical and Surgical Journal, January and February.

Western Journal of Medicine and Surgery, January.

Southern Medical and Surgical Journal, February.

Western Lancet, January.

British and Foreign Medico Chirurgical Review, January.

Edinburgh Medical and Surgical Journal, January.

Glasgow Journal, ditto.

Journal of Psychological Medicine, ditto.

Edinburgh Monthly Journal, ditto.

Braithwaite's Retrospect. (Vol. xxx.)

The London Lancet, to Feb. 10th.

London Medical Times and Gazette, ditto.

The Association Medical Journal. (To Dec. 15th.)

The Dublin Medical Press, to Feb. 10th.

London Pharmaceutical Journal, January.

The Chemist, London. (Dec. No.)

Revue Medico-Chirurgicale, to Dec.

Gazette Medicale. (To Dec. 16.)

El Porvenir Medico.

Revue de Therapeut., to Dec. 15th.

BOOKS AND PAMPHLETS RECEIVED.

A Treatise on the Practice of Medicine, 4th edition, by Geo. B. Wood, M.D.

From the Author.

Ramsbotham's System of Obstetrics. Blanchard & Lea.

Gross on Foreign Bodies. Blanchard & Lea.

Autobiography of Dr. Caldwell. Lippincott, Grambo & Co.

Ranking's Abstract, No. 20. Lindsay & Blakiston.

Puerperal Fever, by Oliver Wendell Holmes, M.D.

Inflammation, etc., of the Cervix Uteri, by James M. Green, M.D.

Yellow Fever and its Relations to Quarantine, by S. L. Greer, M.D.

Report of the Pennsylvania Hospital for the Insane.

Table of Urinary Deposits, by John King, M.D.

Transactions of New Hampshire Medical Society.

Second Annual Report of New York Ophthalmic Hospital.

The foreign correspondents of the Examiner will please direct their Exchanges, Books for review, and other communications, to the care of Trubner & Co., No. 12 Paternoster Row, London, or Mr. H. Bosange, 21 Bis, Quai Voltaire, Paris.

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T O T H E
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THE
MEDICAL EXAMINER.

NEW SERIES.—NO. CXXIII.—MARCH, 1855.

ORIGINAL COMMUNICATIONS.

Note on Secondary Variolous Ophthalmia. By DR. LITTELL.

Mr. Editor:—In an article published in the September number of the Examiner, I incidentally expressed the opinion, that the opacity of the cornea in what is termed secondary variolous ophthalmia was owing, rather to the actual death of the part from inadequate nutrition, than, as is commonly supposed, to the formation in that membrane of a pustule analogous to those of the primary disease. The later occurrence and different appearance of the supposed pustule, is attempted to be accounted for by the difference of texture between the cornea and the skin; but it has, in fact, none of the characteristics of a pustule, possesses, so far as is known, no specific property, and more closely resembles, both in its aspect and progress, a slough detached through the ulcerative process. Its primary seat appears to be the conjunctival covering of the cornea, but the intensity of the subsequent reaction may be such as to implicate also the more deeply seated tissues, producing purulent infiltration of the cornea, effusion into the anterior chamber, iritis, &c., and occasioning greater or less impairment of vision.

The pathological view suggested, is chiefly important for its practical bearing; and therefore it is that I have recalled atten-

tion to the subject. Of course, where the existence of general debility, atony of the extreme vessels, an altered condition of the fluids, and defective assimilation might almost certainly be presumed from the gravity of the previous constitutional malady, no prudent practitioner would think of employing depletory or antiphlogistic remedies with the same freedom as under other circumstances; but the importance of the organ and the severity of the inflammation, occupying his attention to the exclusion of the general depravation, might, nevertheless, betray him into the use of means from which he would not reap all the advantage that could be obtained, or which, indeed, by thwarting the restorative efforts of nature, might be positively injurious.

Regarded, however, as a slough occurring in a tissue of low organization, on the periphery of the system, and subject, therefore, to the operation of known laws, the indications of treatment are sufficiently apparent; imparting at once confidence to the physician and certainty to practice.

The Ol. morrhuae with the spirits of turpentine as an alterative, a generous diet, the sulphate of quinine, and morphium to procure rest at night, are the chief general remedies which I have found necessary. Mackenzie recommends the tartrate of antimony so as to vomit and purge freely, during the acute stage of the inflammation, and subsequently has recourse to tonics. Where the internal parts of the eye become involved, calomel in small doses should be given in conjunction with the quinine, or as part of a course more actively antiphlogistic. The local inflammation, within certain limits, is a salutary movement, instituted to separate, in the first instance, a portion of the economy, now dead and useless, and afterwards to repair the consequences of its destruction. Should it transcend the degree required for this purpose, and threaten to implicate other tissues also, a few leeches to the temple will suffice for its abatement, and the relief of the congestion; but usually, no other topical treatment is demanded, than the use of atropia or belladonna to preserve the dilatation of the iris, and the application to the ulcer remaining after the detachment of the slough, of a weak solution of the nitrate of silver. Should further stimulation be indicated, the wine of opium, diluted or otherwise, may be advantageously prescribed.

February 15th, 1855.

On Resection of the Tarsal and Metatarsal Bones in Caries of the Foot,—as a means of avoiding amputation. Illustrated by a case of resection of two of the cuneiform and two of the metatarsal bones—cured. By HENRY H. SMITH, M.D., Consulting Surgeon to the Philadelphia Hospital.

With the exception of the vertebrae, few of the short or thick bones are more liable to caries or to tuberculous deposit than those of the foot. When developed in these bones, caries seldom extends itself rapidly, but rather excites such inflammatory action in the surrounding parts, as tends to circumscribe and limit the disorder to the bone in which it originated. Although often accompanied by considerable constitutional disturbance, as well as by swelling and inflammation of the soft tissues, the ultimate tendency of caries of the bones of the foot is towards a cure; so that when the absorbents are aided in the removal of the diseased bone, the soft parts often again resume their natural appearance and perform their normal function. Caries of the tarsal bones may therefore be regarded as a disorder of a partial character, as it does not involve an extended surface. According to Mr. Miller,* all carious bones present three parts: "1st, a central ulcerous cavity. 2d, a circle exterior to this, which is affected by interstitial absorption; and 3d, a portion (which is of comparatively sound bone,) in which there is a low grade of action of the sthenic character. The two interior circles are, he remarks, "incapable of efficient reproduction or repair; but the external ones atone for their deficiency by throwing out new osseous matter."

If, then, in caries of the foot, the elimination of the diseased structure be aided by incising the soft parts, perforating the exterior shell of bone, and scooping out or otherwise removing the diseased particles, healthy granulations will arise from the outer circle of the bone, and the patient's general health be improved by the diminution of the otherwise long period of confinement.

But in addition to the time saved by this means of treating caries of the bones of the foot, the patient will also be materially

* Miller's Principles of Surgery, American Edition, p. 44.

benefitted by the preservation of that portion of his lower extremity which is essential to active or graceful progression. In amputation at the metatarso-tarsal articulation, either as practised by Hey or by Lisfranc, the patient is necessarily deprived of the length of a portion of the limb which is intended by nature to aid him in progression in the erect position; whereas by resection this is preserved, and a steady support in walking guaranteed, as will be apparent from a slight reference to the structure of the foot. If the function of the foot was merely to aid in the support of the body in the erect posture, its length would probably not have been extended beyond the tarsus, as the arched form of these bones, together with their close apposition, indicate that they alone would capable of furnishing a vertical support. But the greater length of the metatarsal bones, as well as those of the phalanges when unrestrained by a boot, as clearly demonstrate that their function must be different, and show that they are mainly intended to aid progression, their length and position in advance of the tarsus exhibiting not only the creation of an abutment for the anterior support of the tarsal arch, but also the formation of such a series of moveable props as must add materially to the preservation of the proper centre of gravity in walking. In the Chinese women, where the development of these anterior props is prevented by constriction, the gait becomes unsteady and toddling, whilst in cases of amputation of both feet, it has generally been found necessary to compensate for their loss by the introduction of cork or some other material into the front of the boot. The bones of the tarsus have on the contrary been frequently removed without materially impairing progression, numerous instances of the resection of the astragalus, cuboid and scaphoid, having been reported in which there was little destruction of stability in any forward movement in the erect posture.

As evidence of the value of resection in the preservation of this important anterior portion of the foot, the following cases are now presented.

Caries of the Cuneiforme Internum and Medium, as well as the first two Metatarsal Bones, consequent on injury—cured with a useful foot, by resection.

Francois C., a Frenchman, æt. 39 years, was engaged in May last as a wood-cutter. In June 1854, after having twice bruised

his instep, he was attacked with inflammation of his left foot, attended by great swelling and stiffness. Notwithstanding the pain, he continued working until the effusion gathered and broke directly over the os cuneiforme internum. Being compelled to give up his work, he entered the Philadelphia Hospital early in Oct., 1854, and was treated for his injury, but without much amelioration of his symptoms. In the latter part of this month I saw him and obtained the preceding account. The foot at this time was very much swollen from the ankle to the toes; was of a deep purple color, interspersed with spots of a brighter red, and had upon its dorsum one fistulous orifice over the os cuneiforme internum, another over the upper third of the first metatarsal bone, a third over the cuneiforme medium, and a fourth between the second and third metatarsal bones, or rather in the second interosseous space. A probe introduced into each of these openings readily entered the structure of the bones. There was no motion in the part, and there was a free, sanguous discharge, with marked inflammatory disorder of the soft tissues. The constitutional symptoms were loss of appetite, deranged digestion, and quick pulse, (due to pain, &c.,) and his general habits were only moderately temperate. As I thought that the circumstances seemed to render it advisable to operate and remove the diseased bone, and he declined submitting to amputation till all other means had failed, I decided to resect the first metatarsal bone entire and scrape out the greater portion of the cuneiforme internum, hoping that the removal of these portions would eradicate most of the disease. This I accordingly accomplished in the usual manner, before the medical class, on November 15th. Under the use of the tepid water dressing, the wound did well, and the parts healed kindly, much of the swelling disappearing, but as the other fistulous orifices continued open and the bones beneath them were also diseased, that is, the cuneiforme medium and second metatarsal, I decided to resect them also, which I did on Dec. 8th, by a careful incision on the dorsum of the foot, the tendon and anterior tibial artery being pushed to one side. After scooping out the cuneiforme medium I removed the head and upper third of the second metatarsal bone, and dressed the wound as before. Little or no trouble supervened; the wound healed kindly; the inflammatory action diminished, and on

January 12th, Francois was walking about the ward, improved in health and with every appearance of a useful foot. The depression left by the removal of the bones has been much diminished by deposition and lateral approximation, and the toes are now comparatively useful, much to the patient's gratification, especially as "he has escaped amputation."

A somewhat similar operation was performed by Dr. Geddings, of Charleston, and reported by him in the North American Archives of Medical and Surgical Science, vol. 1, p. 36, Baltimore, 1835. As this case is briefly stated, and is not perhaps readily accessible to the reader, I shall quote it somewhat at length:

"Case of Necrosis of the first three metatarsal and the cuneiform bones—extirpation of them, leaving the corresponding toes; cure."—A boy aged 18 years had his foot enormously enlarged, with several fistulous openings on the instep and inner border of the foot, through which a considerable quantity of ill-conditioned matter was discharged. The probe indicating that the bones were diseased, Dr. Geddings operated as follows:

An incision being made along the inner side of the foot from one extremity of the first metatarsal bone to the other, and its attachments having been destroyed by disease, the bone was readily removed so as to leave the great toe and its proper flexor and extensor tendons entire, and though the cuneiform bones as well as the second metatarsal bone were now found to be diseased, it was thought they might be thrown off by nature. The wound was therefore filled with dry lint, and the foot properly dressed.

As new fistulous orifices formed, and nature did not accomplish the removal, Dr. Geddings decided on a second operation, which he performed as follows: An incision being made in a longitudinal direction, upon the dorsum of the foot and in the course of each metatarsal bone, the lips were separated so as to expose the extensor tendons, and these being drawn aside, the bones were disarticulated first in front and then behind, and dissected from their beds so as to leave the toes with their tendons. This done, the three cuneiform bones were removed, as they could be easily picked away in fragments, in consequence of the progress of the disease. After a few days, suppuration was established,

healthy granulations sprang up, the tumefaction of the foot subsided, and the preservation of the toes was found highly advantageous to the patient in walking, which he was able to do with but a trifling impediment in his step.*

In reporting this case, Dr. Geddings mentions, that it had been pronounced to be one requiring amputation of the leg, "an operation which it is to be feared is often resorted to on account of diseases of the tarsal and metatarsal bones, which might in many instances be relieved by a procedure which would secure to the patient the use of his foot."

Although twenty years has elapsed since the publication of this case by Dr. Geddings, the one which I have reported in this paper is, I believe, the first in which the means of avoiding amputation of the foot proposed by him, has been repeated, or, at all events, published. As a plan of affording relief without creating deformity, the resection of these bones certainly deserves more general consideration among American surgeons than it has apparently received. That the tumefaction and other inflammatory affections of the soft parts which accompanies the disease of these bones, has created anxiety in the minds of some surgeons as to the extent of the disorder, is evident, as nothing else could have induced the performance of amputation. Further investigation on the part of those who have hitherto looked favorably on amputation as a means of relieving a patient under these circumstances, will, however, show, that most of these appearances of great disorder are only skin deep ; that the affection of the bones which originate it, is circumscribed, and that by the removal of the cause, the remainder of the member may be preserved. In the form of caries usually described as "scrofulous disease" of the bones of the foot, there is often only the deposit of a solitary tubercle in the cancellated structure, and it has been well shown by Nelaton†, that the progress of tuberculous matter when deposited in bone is similar to that noticed when it is deposited in the lungs ; that is, to irritate and inflame the surrounding parts, and thus lead to the suppuration and disintegration of tissue, until it is thrown off. But in the dis-

* Dr. Geddings, loc. citat.

† Recherches sur l'Affection Tuberculeuse des os. Paris, 1837.

tegrating process as seen in bone there is a marked tendency in the pus to discharge towards the surface instead of invading the neighboring articulations, and hence resection of the bones of the foot presents us, even in these cases, with a means of eradicating the diseased structure, and yet preserving sufficient of the adjacent sound parts to enable the patient to use the foot.

Case of Fracture of the Skull, successfully treated. By GEORGE DOCK, M. D., M. A. N. S., etc., Harrisburg, Pa.

On the 1st of November, 1854, about nine o'clock in the morning, Singleton Welden, aet. 34 years, during a scuffle with one of his neighbors, received a blow on the head from a spade, which felled him to the ground, rendering him insensible for a few moments. He soon recovered, however, and in the course of the morning, after the immediate effects of the concussion had subsided—sickness at the stomach, &c.—he walked several squares to the office of a justice of the peace, and entered a complaint of assault and battery. He then returned home, complained about noon of sickness at stomach, vomited, and had slight pain in his head. About 4 o'clock, P. M., he was seized with convulsions, and gradually sank into a state of unconsciousness.

About 8 o'clock that evening, Dr. S. T. Charlton, his attending physician, called at my office, gave me the above account of the case, and requested me to go with him to see his patient. I went with him, and found Welden lying on his back, in an unconscious, deep comatose state; his skin cool, breathing labored and stertorous, pupils slightly dilated, forehead covered with drops of cold perspiration, pulse about 120, confined and intermitting, and occasionally there was a convulsive twitch of right arm. His feet and legs were cold. Upon examination, I found over the ridge of the left parietal bone, a puffy tumor of the integuments, about two inches in diameter, with but a slight scratch of the skin. By manipulating directly over the swollen integuments it was impossible to ascertain the condition of the bone, but by dragging the scalp to one side a little and running my finger around the margin of the swelling, I detected, very distinctly, the sharp edge of the fractured bone, and the depression of the piece to a considerable depth. The case resolved itself clearly to us as

one of *concussion* with *compression*, in our opinion requiring immediate attention. Having procured my trephining instruments, I made an H incision through the integuments, (previously removing the hair,) dissected back the flaps and laid bare the bone, which was fractured in an oval shape, to the extent of about one and a half by two inches in its diameters: the piece of bone, from its upper and anterior corner, along its upper line, back and down to its posterior and lower corner, was detached and driven in, so that its outer table was on a line with the inner table of the skull. The lower line and interior portion was bent, but firm. I placed the trephine on the anterior end of the fractured piece and perforated it, but was yet unable to raise the bone with an elevator. I then took Hey's saw and sawed across the end along the line of fracture. I then sawed across the piece lengthwise at a right angle from the first, along the lower, attached side of the piece, thus detaching the fractured piece completely, the outer table of which I removed with an elevator and my thumb. This piece was fissured into three portions, which were merely held together by the periosteum—considerable blood flowing from the bone, as well as from a small branch of the middle artery of the dura mater, which latter, I was obliged to ligate, I sponged out the wound gently with a soft sponge, and proceeded to the removal of the fragments of the internal table, which were six in number and formed a piece of much larger dimensions than the outer, shelving in some distance under the outer, sound table. The dura-mater was slightly lacerated about the centre of the wound, but no cerebral hernia presented. I searched around carefully under the shelving bone with my finger, and removed all the loose bits I could find. I then dressed the wound with a little dry lint, brought the flaps together partially, and applied a compress and light bandage.

In about twenty minutes afterwards, his pulse began to improve, and his breathing became more regular and tranquil, nature expressing herself as relieved in tones that were perceptible to us, and encouraging. I directed warm applications to his feet, sinapisms to his legs, and the administration of an enema, and left him for the night, with a full knowledge of the treache-

rous nature of his injuries, and with but a gloomy prospect of his recovery.

On visiting him next morning—Nov. 2d—I found a gentle, but steady development of vital action, though he was still unconscious and unable to swallow even a teaspoonful of water. The enema having produced but little effect, I ordered another and more active one. His breathing was calm, his pulse 100, and he had passed his urine during the morning.

Nov. 3d. Rested quietly last night; exhibits slight consciousness this morning, swallows a little milk that I put into his mouth with a teaspoon, and turned over on his side; reaction fair, but not violent.

4th. He is still improving, opened his eyes and looked around solicitously, but cannot speak; takes milk now and then, and seems easy; as his bowels do not respond properly to the enemata, and he is now able to swallow, we gave him calomel grs. v. Enema of castor oil in the evening.

5th. He is more lively this morning, wound depurating nicely; pulse coming up in strength; sensible, and answers yes or no to questions properly; takes milk sweetened with sugar; bowels opened last night.

R. Hyd. c. mit., grs. vi.
Ipecac. pulv., grs. ii.

M. divid. in chart. vi, one every three hours.

6th. Improving finely. We directed one powder three times a day, for a few days.

From that time forward he steadily improved without an untoward symptom. His right arm was partially paralyzed for a week or so, but then recovered. By the middle of December he was up and about his house. At the present time he is in perfect health, bodily and mentally, and working at his trade.

Remarks.—The points of interest in the above case are too evident to require much comment. 1st. The case appeared as one of concussion alone, and that not very serious to a casual observer. 2d. The length of time elapsing before it unfolded its compound nature, as one of concussion with *compression*. 3d. The extent of the fracture and disparity between the external and internal surfaces. 4th. The favorable recovery, without any undue inflammatory reaction of the injured brain or its

membranes, followed by the kind healing of the wound, caused by the removal of so extensive a portion of bone.

The wonderful elasticity and recuperative powers of nature were well displayed in the above case; thus encouraging and lighting up the saddened heart of the practitioner in his conflict with one of the most gloomy and desperate injuries to which his fellow man is subject. Such cases teach us that Nature is the archiater after all, requiring from man but his assisting lever, when enfeebled. Even then, he must be careful what point he selects as his fulcrum, and apply his force with such nice discrimination, as not too recklessly to shatter her tottering fabric.

I must avail myself of this opportunity to acknowledge the able assistance rendered me, during the management of the above case, by Dr. S. T. Charlton, an intelligent physician of our place; and also by Mr. J. Cameron Jones, my much esteemed and attentive pupil.

Feb. 9th, 1855.

Extraordinary case of Opium Eating Cured. By W. H. MYERS.
of Loudonville, Ashland Co., Ohio.

In the habitual use of the narcotic opium, nothing is more striking than the facility with which the system bears its gradual increase, each successive dose being less efficient than the preceding one, if delayed until the action of the former has terminated. The truth of this will be made sufficiently evident by the following case:

In the fall of 1853, a physician came under my observation who had habitually used opium as a stimulus for *six years*. Its effects during the first part of this period were, as usually described, exhilarating; a calm, cheerful, hopeful state of feeling existing, with freedom from care, dreamy reverie, and pleasing hallucinations. But these had long ceased, and he was now suffering pangs from the same drug that had afforded him such varied enjoyment, all its pleasures being replaced by morbid fancies and sensations of the most unpleasant character. At this time he was using the enormous quantity of from *fifteen to eighteen* grains of the sulphate of morphia in twenty-four hours, taken at intervals of four

hours and continued during the night. Thus, the repetition of the stimulus followed so quickly and regularly, as to anticipate the appearance of the consecutive debility, the unavoidable consequence of its abstraction.

I will only describe a few of the most prominent symptoms:—one of these was a constant and fixed delusion, presaging impending death; this feeling haunted him day and night, accompanied with a morbid dread, sometimes definite and often ill defined. His behaviour, temper, spirits and conversation partook of this predominant belief, with a disposition to intrude the subject which was the basis of his thoughts. Accompanying this condition was a belief that his intellect was disordered, or becoming so; loss of control over his mental operations; neglect of business; walking restlessly at night; sleep almost banished; terrific and distressing dreams; altered sensibility; numbness; pricking in the hands and fingers; tinnitus aurium; hallucination of voices and conversations in his presence; muscae volitantes; phantoms or fancied visions; vertigo; muscular contractions; uncertain walk; diminished strength; inability to stand or rise in bed, and varied action of the heart as regards its frequency, and force. The abdominal symptoms were sense of sinking, weight, fulness and dragging, accompanied by unusual constipation, and a distaste for food.

After treatment had commenced, a set of new symptoms were developed; his bladder, became excessively irritable, accompanied with profuse diarrhoea and gastric disturbance, nausea, vomiting and great prostration; with a disagreeable sense of formication in the scalp. While in this condition attempts to quit the injurious habit were made, but ineffectually. A number of physicians of celebrity were consulted, who all suggested a recourse to substitutes. Extracts of belladonna, aconite and cannabis were tried, but without deriving the least benefit from their use. Reason was already partially dethroned, and death seemed inevitable. After all these repeated failures I addressed a letter to Prof. Dunglison, of Philadelphia, asking his advice, who, in reply, wrote as follows:

Philadelphia, February 17th, 1853.

DEAR SIR,—There is no safety for your friend, except in a fixed determination to diminish daily the amount of the narcotic, not by guess,

but by absolute weighing out of the daily allowance. To give it up all at once, would be followed by most distressing phenomena; but if he gradually diminishes the amount consumed, the privation may be tolerated, and the pernicious evil be ultimately got rid of. It will require, however, the most *dogged* resolution to carry into effect this plan, otherwise it must fail. In the depression and sinking that may arise, he may have recourse, three or four times a day, to from forty to sixty drops of the *spiritus ammoniae foetidus*, of the London and Edinburgh Pharmacopeias, formulæ for which are to be found in the Dispensatory of the United States. The further details of treatment will suggest themselves to you. The most important thing is to establish a clear indication, and to let nothing interfere with its being energetically fulfilled. No substitute can be used for the narcotic which will not be ultimately as injurious; and experience has taught me that the plan I have suggested to you has been entirely satisfactory and successful. That it may be so in the case on which you consult me, is the sincere wish of your obedient and humble servant,

ROBLEY DUNGLISON.

This plan, persevered in with the most determined resolution, diminishing, almost imperceptibly, the dose from day to day, was entirely successful in twenty weeks in reclaiming our victim, and restoring him to the society of his friends in full possession of his faculties and in the enjoyment of good health, entirely cured of the habit of opium eating, and free from all its evil effects.

Medicinal Effects of Saleratus.

Our attention has been directed to a paper in the *Boston Medical and Surgical Journal*, by Dr. W. A. Alcott, entitled, "Mortality among Children," wherein the author attributes the great mortality of children under five years of age, amounting to three fifths of all who die, principally to the use of saleratus in bread. This bold assertion is made without even an attempt to substantiate it by facts, other than the statement that Orfila places it in the list of irritant poisons. This, undoubtedly, is true, but the same list contains nearly all the saline substances that are in general use, common salt not excepted, several cases being mentioned by Orfila where death has resulted from the excessive use of salt itself.

Criticism upon such idle statements would not justify the use of the space required in a medical journal, if the readers of the original articles were medical men alone; but the various

periodicals and newspapers of the day greedily copy remarks of this nature, since it cannot but excite a lively astonishment in the minds of their readers that they have survived the frequent use of such deadly poisons. It is needless to say that nineteen-twentieths of those who use this substance are perfectly ignorant of its nature and properties, merely knowing that saleratus is saleratus, and are quite as ready to believe it to be a poison as they would tartar emetic or blue vitriol. It is, therefore, due to the public that they should know whether they have been needlessly alarmed by the vagaries of a visionary, or whether they have indeed for years been slowly poisoning themselves with this drug.

Before entering upon any investigation into the properties of this substance, it is necessary to give a few passages from Dr. Alcott's paper. He observes :

"In regard to the causes of this fearful and fearfully increasing infantile mortality—for there are doubtless more causes than one—I have something to say, suggested by the study of the subject for thirty years or more. And though I lay no claim to infallibility, I do greatly desire to be heard.

"My first suspicion rests on the too free use of alkalies among us. I say 'the too free use,' because, although I should not be likely to encourage their dietetic use, in any quantity, or in any circumstances of *health*, yet there is certainly a wide difference between excess and moderation. It is one thing to use just so much saleratus as shall be neutralized by the acetic acid it meets with, so as to leave no residuum but a little acetate of potash, and quite another to use the alkali so freely that a portion of it remains in the stomach and intestines unneutralized. Yet the latter is an every-day occurrence. Our children, generally, have their first passages in a state of sub-inflammation, from this and other kindred causes ; and though the use of mild acids, especially those of fruits, may do something to soften or mitigate the condition, is it any wonder that bowel complaints, in these circumstances, become very severe and unmanageable ? Is it any wonder that two-fifths, and in summer three-fifths of all who are born, die under five years of age?"

"My deliberate conviction is, that the families of twenty millions of people in our United States population—amounting to about four millions—use the average quantity of five pounds of this alkali yearly—or one pound to each individual. This is an aggregate of twenty millions of pounds. How much of this goes into the alimentary canal and courses its devious way without meeting with any free acid or other substance calling into play new affinities, cannot easily be told. In these days of excess in its use, I fear one-half. But to be safe, I will place it at one-fourth. Is it so, then, that the lining membranes of our people—

our children among them—must be irritated yearly by 5,000,000 pounds of uncombined, unneutralized saleratus? The very thought is enough to make one shudder!

"From ten to twenty grains of this substance is sometimes put down in our medical dictionaries as a dose. Place it at thirty. Do we swallow 960,000,000 doses of medicine a year, in this careless, uncalled-for manner? What effect can medicine be likely to have, when given in an emergency, to children who have been irritated day after day, and year after year, in this way? I have said irritated—not poisoned. Yet Orfila, I find, calls saleratus an irritating poison, and gives us a long list of its terrible symptoms."

Dr. Alcott forgets that at least one half of the number of deaths here cited must have been of children under one year of age, most of whom have never eaten bread of any sort, *with or without* saleratus; it consequently cannot have been the exciting cause in these instances.

The substances sold under the name of saleratus, may be divided into three varieties, viz.: potash saleratus, soda saleratus and bi-carbonate of soda. The latter is met with generally in a state of almost absolute purity. The other two consist of variable mixtures of carbonate and bi-carbonates of the above named alkalies, contaminated with the impurities existing in the materials from which they were prepared, *i. e.* pearl ash and soda ash.

Soda saleratus contains, generally, a small percentage of sulphate of soda, and a large proportion of common salt. Potash saleratus contains all the saline ingredients capable of existing in the infusion of wood ashes, from which it is derived, principally sulphates, chlorides and phosphates of the alkalies, and traces of the corresponding lime salts. It is unnecessary to take their medicinal action into account, being contained in too small amount to exert any appreciable action upon the animal economy. We need, therefore, only direct our attention to the effect of the carbonates and bi-carbonates of potassa and of soda, bearing in mind, however, that in all cases where saleratus is used judiciously, that is, in combination with an acid in the ratio of their respective equivalents, or the acid slightly in excess, the salt present in the bread must necessarily be a compound of the acid used; consequently, the acetate, lactate of soda or of potassa, in place of the carbonates of the same basis; the acetic, lactic and tartaric acid being almost exclusively the only ones ever present,

whether intentionally added, or present in the form of sour flour or milk. All of these salts above named are *very* gentle purgatives; most, if not all, of them possessing less action, and requiring to be administered in a larger dose than even common salt itself, (from $\frac{1}{2}$ oz. to 1 oz.) No injurious effects can possibly, therefore, arise from their constant use in the small quantities here occurring.

From 30 to 40 grains of saleratus is more than sufficient for raising bread made from two pounds of flour, or enough for a meal of twelve persons. Taking the larger amount, 40 grains, each person will consume about $3\frac{1}{2}$ grains at once. Supposing, from carelessness or ignorance in the use of it, that the whole amount should remain unsaturated, and consequently remain in the form of carbonate or bi-carbonate, could the above quantity produce any bad effects?

It is well known that the nature of the action of most saline substances, depends much upon the state of concentration of the solution in which it is exhibited. Golding Bird* says:

"When, therefore, saline substances, especially, are intended to be absorbed and ultimately to reach the kidneys, it is necessary that the density of their solutions should be much below 1.028; the proportion of solids dissolved in the aqueous vehicles prescribed being always less than five per cent. Daily experience in the employment of remedies will show the importance of this law in a therapeutical sense. Thus, a tolerably strong solution of the tartrate, or acetate of potass, will altogether escape the absorbents; indeed, so far from being imbibed by the capillaries, it will actually excite an exudation of water from these vessels in the stomach and small intestines, thus becoming diluted by exosmosis, and a sensation of thirst is excited, by which the patient is compelled to drink for the purpose of supplying the water removed from the blood by exudation. In strong solutions, the salts alluded to, stimulate the bowels and purge. They are, moreover, said to act as *hydriogogue* purgatives, producing watery motions—a fact also capable of ready explanation on physical laws; exudation of water from the exhalents (capillaries) occurring, on account of the density of the saline solution traversing the intestines, just as exosmosis was produced in the experiment of the tube of water immersed in syrup. We can hence readily perceive why half an ounce of acetate or tartrate of potass will purge, and a scruple of either, excite diuresis."

Dr. Parkes, in his valuable paper upon the action of liquor potassæ in health and in disease, remarks:

* "Bird on Urinary Deposits," 2d American Edition.

"The bicarbonate of potash, therefore, had the following action : it passed off very rapidly and in part as carbonate or bicarbonate, with the urine, and therefore, increased the amount of the soluble salts ; it augmented, also, the water by 50 oz., (the calculation was made for twenty-four hours,) the organic solids by 264 grains, the sulphuric acid by 7 grains, and the sulphur by more than 5 grains.

"The action of the bicarbonate of potash appears so far to differ from that of the liquor of potassæ that some considerable portion passes off unchanged in the urine ; whenever this is the case, the urine is rendered alkaline. This passage occurs with such rapidity, that if it is wished to keep up the increased alkalinity of the blood, the salt must be given very frequently, (every hour or so,) if given only every four hours, in less than two it is excreted, so that for two hours the blood is unacted upon."

— In the above experiment 3*iv.* were administered in the space of 13 hours, being about 60 times the quantity that would probably be taken in bread during the same time. It must now be evident that no *constitutional* injury could arise from the use of alkalies in small quantities. With regard to the action exerted by the irritant properties of the alkalies upon the coats of the stomach and intestines, Dr. Parkes' experiments with liquor potassæ are most conclusive. We extract his results at length.

"If this remedy be taken soon after meals, its action is that of an ant-acid. It combines with hydrochloric or with lactic acid, and then, doubtless, passes into the circulation. What appreciable effect it now produces is not indicated in the tables above given, but it does not increase either the water, solids, or sulphuric acid of the urine. If the liquor potassæ be taken into an empty stomach, it passes unneutralized into the circulation, and probably through the veins ; in so doing it must produce an effect on the walls of the capillaries and small veins ; but the extent of this cannot be known. As much as 5*ij* have been taken with only 4 oz. of water, without causing epigastric pain or uneasiness (although it produced considerable temporary scalding of the mouth and throat), and without apparently producing any local effects in the stomach. In, usually, from thirty to ninety minutes after its entrance into the circulation, an increased flow of slightly acid urine occurs, which contains the whole of the potash, organic matter differing considerably from that of ordinary urine, and a relatively large proportion of sulphuric acid ; the phosphoric acid and the chlorine are less changed. Perhaps an organic acid (not uric, and probably not hippuric) is also present.

"The explanation of these facts is, that an albuminous compound, either in the blood itself, or in the textures, has become oxidized ; its sulphur, under the form of sulphuric acid, has united with potash, and, with possibly the changed protein-compound, is poured out from the kidneys. This oxidizing effect of the liquor potassæ is no doubt assisted.

by exercise, and by copious draughts of water; but in the above experiments, exercise and fluid were abstained from, in order not to complicate the results. The amount of albumen or fibrin destroyed by one drachm of liquor potassæ cannot be considerable, but if the potash were continued in large quantities, oxidation could probably be pushed to any amount. The nitrate and acetate of potash did not in a *healthy system* have the same effects.

"After the increased flow of urine, the quantity passed per hour falls slightly below the standard. It appears to resume its ordinary composition, but its exact condition at this period has not been determined. Some observations on urine in disease would lead me to infer that the uric acid will be found to be increased.

"Such were the effects of liquor potassæ on the urine. The effect produced on other excretions was not obvious. The skin and the intestines appeared quite unaffected, and as all the potash was found in the urine, the reason of this is easily understood. In most of the experiments there were no subjective symptoms of any kind. On two occasions, there was rather sharp frontal headache, languor, depression, slight lumbar pain, and aching of the legs, after the large flow of urine. On the night of the 15th, when the flow of urine, which was proceeding at the rate of 3 iss per hour, was augmented in two and a half hours by 3 xiv, and no fluid was supplied to the system, the pulse became perceptibly small (almost thready) and slow; it remained equal and regular—there was no thirst, no shivering, and no nausea; the skin was dry and warm. In six hours the pulse had quite regained its force and frequency, and the other symptoms had disappeared without any fluid having been taken.

"After the experiments were concluded, the general health did not appear impaired; it was, if anything, better than usual."

When we recollect that liquor potassæ, (solution of hydrate of potassa,) in its action upon animal tissues is, without exception, the most powerful chemical agent that we possess, rapidly destroying and dissolving almost all organic structures *out of the body* with which it comes in contact, we can judge how slight must be the chemical changes produced upon the mucous membranes by the bi-carbonates, being as they are, almost devoid of all alkaline reaction.

If the ill consequences resulting from careless and bad cooking were properly estimated, it would be found that much disease might be traced to sour or badly fermented bread. Dr. Drake, in the first part of his valuable work on the "Diseases of the Valley of America," attributes many of the prevailing ailments to the following, among other causes.

"When the dough for leaven, by the excess of panary fermentation,

has been charged with acetic acid, that product is not in general neutralized by carbonate of potash or of soda, but the bread is eaten sour."

It is unnecessary to deduce further proofs of the slight effect produced by the salts above mentioned. There can be but little doubt that the dangerous properties attributed to saleratus by some persons, exist entirely in their imagination. C.

BIBLIOGRAPHICAL NOTICES.

Grandzüge der Pathologischen Histologie. Von Dr. CARL WEDL.
Wien : 1854.

Outlines of Pathological Histology. By DR. CHARLES WEDL.
Vienna : 1854.*

Pathological Anatomy has of late years received much valuable aid from microscopical and chemical research; indeed, the coarser study of the pathological anatomy of the organs has been rapidly yielding to the minute study of the pathological tissues, or Pathological Histology. Yet, notwithstanding the fact that numerous observers are engaged in the study of this new and interesting branch of science, we have up to the present day not been in possession of a systematic treatise on the subject, as all observations are recorded in separate monographs, or are found scattered throughout the treatises on General Pathology. Dr. Wedl, the author of the volume now before us, determined, therefore, to write a work indicating the "Outlines" of Pathological Histology, and to base it mainly on personal observation ; a task which enormous industry and vast opportunity alone could have brought to anything like a satisfactory termination. Of the possession of the former, the work itself is the best evidence, the latter was supplied by the extensive dead-house at Vienna, which has been rendered so famous through the labors of Rokitansky, and to which Dr. Wedl has been for years attached.

* We are bound in courtesy towards the author to state that the review of this work, a copy of which he politely forwarded to us, has been by accidental circumstances prevented from appearing in print at an earlier period.—REVIEWER.

The work itself is a large octavo, divided into two parts: one discussing General, the other Special Pathological Histology. The first part extends over 108 pages, and is taken up with a consideration of the general pathological conditions of the circulation, and with the formation, in abnormal developments, of cells, fibres, areolar tissue, papillary excrescences, vessels and cysts. The author's views are here well and clearly stated; this whole part, indeed, besides containing many valuable original observations, may be considered as an admirable *résumé* of the present state of general pathological histology. As not the least important chapter in it, we regard the excellent introduction, comprising an account of the means and the methods to be employed in the investigation of pathological tissues. Yet we cannot help stating this part of Dr. Wedl's work to be inferior in value as an original production to the second division, or the one treating of Special Pathological Histology. This is again subdivided into six groups. In the first, or "Inorganic Formations," the different crystals and concretions met with in the human fluids are described. The second group includes the "Atrophies" of tissue and of the blood; the third, the "Hypertrophies;" the fourth, the "Exudations" and their products; the fifth, the "New Formations," as pus, tubercle, bone, etc., whilst the sixth group is devoted to a description of the "Vegetable and Animal Parasites."

Having thus indicated the general contents of the volume before us, let us now examine more closely some of its more important parts. The basis of Pathological Histology, after all, must be the study of the cells, and the ultimate end which pathologists must strive to reach, will be to determine the changes which imperfect nutrition, and other causes, produce on the cell-elements and the tissues they form. Let us, for example, take up the most frequent of the "Atrophies" occurring in cells or in any formed tissue, and dependent upon faulty nutrition, viz., *fatty degeneration*. This in cells consists of the appearance within the walls of a quantity of a fine molecular fat, or sometimes even of distinct oil-globules. This deposit results in an atrophy of the cell, and is generally supposed to affect primarily the nucleus, which it causes to shrivel up and disappear. This primary atrophy of the nucleus Wedl denies, and every microscopist must agree with him at least in this particular, that it is not uncommon

to meet with whole groups of cells nearly over-distended by fatty infiltration, in which the nuclei are as distinct as in normal cells, and perfectly unaltered in shape. In determining this point, it is of the greatest importance to bear in mind that the cells in many organs contain normally much oil. Fatty degenerations of tissues occurs most frequently in muscular fibre and in the blood-vessels. The fatty infiltration and consequent softening of the coats of the capillaries of the brain is probably a not unfrequent cause of apoplexy.

The formation of *vessels* in pathological tissues Wedl describes as occurring free in an exudation, without any necessary connection existing with previously formed capillaries. The first step, he thinks, is the formation in this exudation of branched cells, whose processes then becoming connected, the walls are absorbed, and thus a communicating system of primary capillaries is developed, from which then again others may arise. If this view be correct, the process of formation of vessels in pathological tissues, would correspond closely to the development of vessels which Schwann and Kölliker describe as occurring normally in the tail of a tadpole; it would indeed be but a slight modification of the old view of John Hunter on the subject. The diameter of these newly-formed vessels is generally greater than that in those of normal tissue; in structure they consist of a layer of fibre-cells with oblong, longitudinally arranged nuclei. In the arachnoid, this simple structure of the vessels is, remarkably well shown, as here they are more like capillaries, and never possess either a longitudinal or annular fibrous coat.

A subject which Wedl has evidently carefully investigated is the formation of *cysts*. The word cysts he restricts to an

"excessive augmentation of the spaces in areolar tissue with a papillary new formation. Hence cysts are more readily seen in organs in which new formations of fibrous tissue and of papillary excrescences frequently occur, as in the thyroid gland, mammary gland, ovary, kidney, etc. Yet this does not exclude their formation in any organ, only they will be more rarely seen in parts, in which new formations of areolar tissue and papillary excrescences seldom occur. We regard, therefore, cysts never as primary, but always as secondary formations." (p. 102.)

Now although this view of the nature of cysts may be convenient to explain their formations, we cannot regard it as altogether based upon strict pathological research. Primary cysts, or as

Paget* terms them, "autogenous cysts," occur in parts where certainly at first no fibrous tissue existed; thus we see cysts originating in soft cancerous tumors, evidently from the transformation of the morbid structure, and not from the expansion of the areolar spaces of the fibro-cellular tissue. In their minute structure, cysts consist of an external coat of fibrous tissue, lined by a layer of cells like those of pavement epithelium. This epithelial lining is, according to Rokitansky†, frequently absent in large cysts. Wedl describes it to be invariably wanting where parts of the fibrous coat project into the cyst-cavity. Seated on these projections are sometimes "dendritic" formations, which Wedl has observed to acquire sometimes so large a size as nearly to fill the cavity of the cyst, and by their transformation into smaller cysts, (in a manner presently to be described,) to give rise to compound cystic growths. In the external coat, different organs, as hair, teeth, etc., may form, which, by subsequently projecting into the cyst, cause the singular phenomenon so frequently seen of cystic growths containing, as it were, these structures.

As we have already stated our author believes cysts to be invariably secondary formations. He conceives first an exudation to occur from the blood-vessels into the areolæ of the fibro-areolar tissue. This exudation is then transformed into fibre-cells and vessels, whilst a fresh exudation completely fills up the space in the areolar tissue. The fibre-cells in the walls of this former space are now further developed into papillary excrescences with dendritic vegetation, whilst at the same time the effused blastema forms epithelial cells, which serve as a lining to the minute cyst. This process may be repeated in several areolæ, and a compound cyst results, whilst if the exudation have occurred into a large areola, which encloses smaller, the effused fluid will cause an absorption of their fibrous walls giving rise to one large cyst with irregular projections of the fibrous coat. These observations and the theory based upon them, we find very difficult to reconcile with the theory on cystic formations recently advanced by Rokitansky, (*loc. cit.*) who, as the result of much careful investigation, declares all cysts to be primitive

* *Lectures on Surgical Pathology*, Phil. 1854.

† *Ueber die Cyste*. Vienna, 1852.

formations, and traces their origin from a nucleus and a structureless vesicle, containing a clear fluid, upwards into a perfectly formed growth.

Amongst the group of "exudations" we find *colloid* mentioned. This colloid, which has again quite recently, through Virchow's discovery, become a substance of such disputed import, is a transparent, apparently homogenous exudation, resembling gelatin, and is mainly found in cysts, especially those of the thyroid gland. Colloid, when it coagulates, presents under the microscope, the appearance of large bodies, consisting of concentric layers of an opaque substance, described by most authors as "concentric colloid-corpuscles;" by Kölliker and Virchow under the name of "corpora amylacea." The distinguishing micro-chemical reaction of these corpuscles is, that they are not acted upon by acetic acid nor diluted alkaline solution, whilst strong alkalies generally dissolve them. Wedl has met with this exudation in many tissues and fluids. He distinguished round colloid-corpuscles, distinctly granular, and possessed, towards the circumference, of radiating striae, in cysts of an atrophied kidney, also (although in this case they were more hyaline and oval) in an inflamed choroid coat after the removal of the pigment. As belonging to colloid he also enumerates those peculiar reddish, concentric bodies which Hassall has depicted as existing in the prostate gland of aged people, but which, long ago, Virchow proved to be a proteinaceous substance, analogous to that found in the seminal fluid. He further classes as colloid the corpuscles found in the peculiar pathological condition known as "waxy spleen," and also the corpora amylacea of the brain.

It will be seen from this but partial enumeration of the corpuscles which Wedl has grouped as colloid, that he considers this exudation to be unusually prevalent in pathological productions. We doubt not, however, that many substances which are thus considered colloid, are, in reality, concretions of different substances. We have already indicated, that the corpuscles in the prostate are proteinaceous, the recent discoveries of Virchow* permit us further to state that the corpora amylacea of

* See Virchow's *Archiv.*, Vol. vi., 1, 2, 3; and *Medical Examiner*, 1854, Vol. x. pp. 267 and 333.

the brain and the corpuscle in waxy spleen do not belong to the colloid group, but are in reality substances like vegetable cellulose, for on addition of iodine and sulphuric acid they assume the peculiar characteristic violet color of this substance. That all the "colloid" corpuscles met with in other situations are, on the other hand, not cellulose, is nearly settled. Virchow tested by iodine and sulphuric acid the concentric bodies in the concretions of the prostate and of the vesiculæ seminales, and they remained unchanged, whilst again Busk* and Donders,† who repeated Virchow's observations on the amylaceous brain-matter consider his "cellulose corpuscles" to be starch granules, and Meekel‡ affirms them to be cholesterine. Now from this chaos of conflicting opinions to which Virchow's discovery has given rise, we must look to chemistry to extricate us, yet we are already justified in concluding that the corpuscles which have hitherto been described as colloid, are in reality masses or crystals of many different substances, including albuminoid masses, starch-granules, and cellulose.

The subjects we have discussed are for the most part treated of in the first division of Dr. Wedl's work; the second part, whose contents we have already indicated, is replete with many valuable original observations, but our space compels us, instead of following the author throughout in his descriptions, to consider merely one of the most important of his groups, the "New Formations." These Wedl has classed under ten heads; first, the granular cells and masses; the second, pus; the third, tubercle; the fourth, new formations in typhoid fever; the fifth, new formations of fibrous tissue, as on the skin and in the different organs; the sixth, new formations of fatty tissue; the seventh, cholesteatoma; the eighth, osseous and cartilaginous new formations; the ninth, formation of tooth substances; and lastly, the tenth, cancer. Now amongst these, again, the formations which, on account of their frequent occurrence and importance, recommend themselves more particularly to the attention of the pathologist, are pus, tubercle, typhoid fever products and cancer.

* Microscopical Journal, 6 Jan., 1854, p. 101.

† Nederlandsch Lancet, 1854.

‡ Berliner Annalen, 1854.

Pus, Wedl regards, and he agrees with Vogel, Paget and nearly all modern observers in this particular, to be a true degeneration of an inflammatory plasma, and not simply, as frequently supposed, an increase of white corpuscles of the blood. Mucus, as it is met with in pathological products is but modified pus. It contains more mucin in its composition, but the corpuscles are identical, since acetic acid will render nuclei apparent in both.

Formerly all small elevations occurring in any tissue were denominated *tubercle*. Now we design as tubercle, masses analogous to those found in the lung, which are clinically connected with a certain set of well-marked symptoms. The form tubercles present is very various. Some are small grey elevations, others distinctly isolated yellow masses, some are really infiltrations into tissues, others are merely loosely surrounded by the parts in which they are deposited. Yet all these varieties agree in this particular, that they never contain vessels, and that they consist microscopically of granules, a firm proteinaceous blastema in flakes, of nuclei and imperfectly formed granular bodies and cells. The difference in their external appearance led Rokitansky to consider grey and yellow tubercles as two distinct varieties of fibrinous lymph, and induced Robin to advocate the singular view that tubercles are never grey, but that true tubercular matter is always yellow. The difficulty of distinguishing between tubercles and some forms of degenerate lymph, and arrested cell formation is sometimes very great; and, in consequence, many pathologists have sought for special corpuscles by which tubercle might be recognised. Thus it was that Lebert gave the name of "tubercle corpuscle" to the peculiar irregular granular bodies without distinct nuclei and uninfluenced by acetic acid, so frequently met with in tubercular masses. Wedl does not consider these bodies of much diagnostic importance, for he affirms that he has met with the same bodies in the products found in the intestines in typhoid fever, and regards them only as cells arrested in their development. He considers, indeed, the microscopical diagnosis of tubercle only possible by a system of microscopical exclusion.

*See Bernard and Robin on the Blood. Phila. 1854.

"Positive, characteristic elements tubercle does not possess. The microscopical diagnosis must therefore be made by exclusion. If we meet with a pathological new-formation consisting only of the above named constituents and fully formed cells of various shapes, if blood vessels or blood spaces, or a fibrous stroma enveloping the cells be absent, we are sure that it is a pure tuberculous formation we have before us. If, on the other hand, the imperfectly formed elements are only found in part of a new formation, for example, of a cancer, while perfectly developed cells of different shapes, along with blood vessels and areolar tissue are seen in other portions, we would regard this formation as a cancer, in part of which the organization had not progressed very far, and had remained, as it were, stationary, in the same low grade as it does in the formation of tubercle." (p. 367.)

When tubercle has existed for any length of time, its general tendency is to soften, or else it changes into a calcareous substance. Softened tubercle resembles pus, but does not contain the same corpuscles as the latter; for, examined microscopically, it consists of molecules, oil globules, free nuclei and imperfectly developed cells. In calcified tubercle, Wedl has found, besides the calcareous salts deposited in the centre of the hardened mass, oil globules, brownish pigment and crystals of cholesterine.

As closely connected with tubercle, both in regard to its mode of development and structure, Wedl describes the *deposits* that take place in *typhoid* fever in Peyer's glands, in the mesenteric glands, and between the mucous and muscular tissue of the intestine. The elements he has observed in these infiltrations are cells 0.008 to 0.024 mm. in size, of a roundish form, and containing one or sometimes several oval nuclei. These cells also enclose many fine granules, sometimes, also, oil globules, which conceal the nucleus and fill up the whole of the interior of the cell. Besides these roundish cells, which are the most abundant, he finds in typhoid fever infiltrations, many spindle-shaped cells with large oval nuclei and nucleoli. In many cases, instead of masses of fully developed cells, Wedl states that he has met with granular bodies, similar to the ones Lebert has described as "specific" tubercle-corpuscles. On the surface of the ulceration, the organic new-formation is not distinct. Here nuclei of varying size and a few oval cells are found imbedded in a molecular mass containing also fat-globules.

The last of the new-formations which Wedl describes is *cancer*. We cannot follow our author in his elaborate description of the

various forms of cancer met with in the human economy, but will merely state, that he is one of those who deny the specificity of the cancer cell. The microscopical diagnostic marks of cancer on which Wedl seems to lay most stress, are the study of the evolution or involution of the cells, or in other words, their vital phenomena, their growth, their metamorphosis, their multiplication, and the formation of other tissues in the morbid structure. Without entering here into the much vexed question of the cancer cell, we would yet, in this particular, venture to suggest to the author, the employment in his investigations of higher magnifying powers than he seems to have used.

If in conclusion we were called upon to state our impression of the general merits of Prof. Wedl's work, we must express the sincere pleasure we derived from its perusal. The work is, as far as we are aware, the first that has as yet appeared upon pathological histology, but independently of that, it will always retain a high stand on account of the many original and carefully made observations it contains. The style is plain and distinct, the wood-cuts are the best we have seen anywhere, but in the getting up of the book we miss much a proper index.

DAC.

A Practical Treatise on Foreign Bodies in the Air Passages.

By J. D. Gross, M. D., Professor of Surgery in the University of Louisville, &c. With illustrations. Philadelphia: Blanchard & Lea, 1854.

It is rather surprising, considering the number of monographs which we possess on almost every subject, that no complete one has ever appeared, in any language, on foreign bodies in the air passages. The only paper mentioned by Dr. Gross as even approaching such an attempt, is the "Memoir on Bronchotomy," by Mons. Louis, published in 1759, in the Transactions of the Royal Academy of Surgery. Celebrated as this paper was in its day, few practitioners, we suspect, knew of its existence, much less were able to use it, as a work of reference, previous to its mention by our author. Several papers, it is true, have appeared in Great Britain, upon the subject; from none of these, however, can much information be obtained. A short memoir, by Dr. H. G. Jameson, of Baltimore, published in the *American Medical*

Recorder, is spoken of as being, for a long time, one of the best accounts of the subject in the English language. When we consider the great need of such a work, the comparative frequency of such accidents, the general ignorance of the symptoms they cause, and of the proper medical and surgical treatment to be pursued, we cannot too highly estimate our obligations to the author for the able and elaborate treatise he has given us. His zeal and industry in collecting, arranging and analysing the numerous cases, scattered through the medical journals of this and other countries, in addition to those which now, for the first time, are given to the profession, are deserving of all praise. We have read his treatise through, and we do not hesitate to say that it is in every respect a work, of which, as Americans, we have great reason to be proud.

Chapter 1st discusses the nature of those substances which enter the air passages—the alteration which they are liable to undergo from their retention—their most common situation, and finally, the mode by which they enter and are expelled.

Since the publication of Dr. Gross's treatise, two cases have been recorded which, as they belong to a class not mentioned by our author, we shall briefly mention. One of these was, the introduction, while coughing, of a plug of thick mucus into the air passages of a child, producing the usual symptoms caused by a foreign substance there; tracheotomy was performed in vain, the patient dying a short time afterwards. We record the case in the present number. The other instance alluded to* is that of a lad, eight years of age, who, while playing, was said to have been struck by one of his playfellows. When arrived at his home, a minute or so afterwards, his struggles became so violent that he could scarcely be held. When seen by Dr. Bell, a half an hour after the seizure, his countenance was livid and he was making some feeble struggles, evidently death-throes. Tracheotomy was immediately performed, and artificial respiration afterwards attempted, but without effect, as he gave but two gasps after the operation. Upon examination a diseased bronchial gland, one inch long, was discovered under the epiglottis, and extending from the rima glottidis into the larynx. It had become de-

* *Medico-Chirurgical Transactions*, vol. xxxvi.

tached from its bed by ulceration around it, which opened a way also for its passage into the trachea. The blow complained of was no doubt the means of forcing it from its position *into* the trachea, from which place it was driven into the glottis by strong expulsive efforts.

The case is an exceedingly interesting one, in a medico-legal point of view. Had no autopsy been made, the death would have been attributed to any other cause but the true one, and most serious consequences might have been the result to the boy who struck him, if the case had gone before a jury.

The alteration of foreign bodies in the air passages is of great practical interest to the surgeon. Though many vegetable and animal substances are liable to be occasionally softened and disintegrated by the combined action of heat, moisture and their frequent change of position in the lungs, Dr. Gross very properly reprobates, where the symptoms are severe, the absurdity of trusting to such a contingency. The place where a foreign body becomes arrested will be influenced, materially, by its size, form, and weight. When it is stopped in the larynx it may lodge either in the ventricles or between the vocal chords. It rarely is arrested in the trachea, but, having arrived at its extremity, descends most generally into the right bronchial tube. This latter circumstance is owing to the fact that the septum, at the root of the trachea, is not in the central line, but to the left of it. Hence, bodies, particularly those of considerable bulk, as they strike upon this ridge, will naturally fall over to the right side.

Most substances enter the air passages through the glottis. They may obtain entrance there, however, in many other ways; through the pharynx by ulceration, by wound of the throat, and through the walls of the chest. Cases are given of these different modes of admission.

Expulsion of foreign substances generally takes place at the glottis; occasionally, however, they are discharged through an abscess or fistula in the walls of the chest. Dr. Stanski asserts that he is acquainted with as many as twenty cases where such a result took place. The author reports an interesting case, where a sprig of a juniper tree, which had passed into the windpipe of a young child, was discharged a year afterwards, through

an abscess which opened between the fifth and sixth ribs, near the nipple. The child soon began to improve, and finally recovered, with the right side of its chest much contracted.

Chapter 2d.--One of the immediate effects sometimes produced by the entrance of a foreign body into the larynx is sudden death. The respiration is arrested in a moment, as effectually as from a dose of prussic acid. Drunken persons, or persons laboring large under delirium tremens, it is stated, sometimes die in this way while vomiting. Disease of the epiglottis, also, renders the person having it very liable to such a termination. Occasionally, the sudden ingress of blood into the wind-pipe, during operations upon the mouth or throat, or even when tracheotomy is being performed, produces suffocation, which soon terminates in death. Two singular instances are related where blood produced this result. In one of these it poured into the wind-pipe from an ulcerated artery; in the other, the person was suffocated by a large clot from a wound of the neck pressing upon the trachea. Mechanical occlusion of the glottis, caused by the impaction of a large foreign body in the pharynx and oesophagus, is also mentioned as the occasional cause of death, two instances of which are related.

The 3d chapter treats of the pathological effects of foreign bodies. Changes in the structure of the part with which the foreign substances in contact, as well as those in its neighborhood, are stated to be the most common consequences. Occasionally, remote parts of the lung, of the trachea, and even of the larynx, become affected, either primarily or secondarily. Inflammation of the mucous membrane, mostly limited in extent, and ulceration, both of them accompanied by increase, at first, of the normal secretion and subsequently of muco-purulent matter, are mentioned as the lesions most liable to be produced. When the foreign substance is in the bronchial tubes, inflammation of one or both lungs is a very frequent result. When it has been retained for a long time, abscesses are very apt to form and continue to discharge for months and even years.

A deposit of tubercular matter, it is asserted, is sometimes induced in the tissues adjoining the foreign body. Three instances of this occurrence are related, one of which came under the author's own observation. We do not regard any of the

cases as decisive of this question, as it is quite probable that the tubercular disease may have existed previously in all of them. In many instances, also, we may observe, where the foreign body was retained for years, no such result occurred.

Edema of the larynx, pulmonary emphysema, enlargement and softening of the bronchial glands, effusions into cavity of the pleura and extensive adhesions between its opposite sides, with thickened false membranes, occur not only where the obstruction is seated in the lungs or bronchial tubes, but also, in many instances, where it has not descended below the larynx or upper part of the trachea.

The symptoms which accompany and follow the ingress of a foreign body into the air passages are discussed in Chapter 4th. These are divided by the author into those which take place at the moment of entrance, and those which arise in consequence of the sojourn of the offending substance. We have no space for an analysis of this or the following chapter, which treats of the diagnosis of foreign bodies. We can only heartily commend them to our readers as containing much instructive matter.

An account of 49 cases of spontaneous expulsion of foreign bodies, followed by recovery, is given in the 6th Chapter. In several of these instances, the substance was not expelled for years afterwards. An extraordinary case is given us where a piece of bone, swallowed by a child three years of age, remained in the lungs for sixty years. During all this period the patient was harassed with cough, profuse expectoration and other serious symptoms, and was at one time so feeble that he was compelled to remain constantly at home for eight years. At twenty-eight years of age his health began to improve, and, though suffering considerable inconvenience, he was able to work from that time forwards for fifteen or twenty years. Sixty years after the entrance of the bone, it was ejected by a violent fit of coughing, its exit being succeeded by expectoration of purulent matter streaked with blood.

Eight instances of spontaneous expulsion, followed by death, follow the above account. Five of these deaths were the consequence of induced pulmonary disease; the other three died from the effects of exhaustion, caused by the constant irritation of the offending substance.

Medical treatment, to promote the expulsion of foreign sub-

stances as well as to relieve the evil effects which their presence induce, is treated of in Chapter 7. Dr. Gross condemns the use of emetics and sternutatories, believing that much valuable time is lost in waiting for their effects. Three cases only are given where the expulsion of the foreign substance followed the action of an emetic, while 46 cases are mentioned in a table, in which no result was obtained by their exhibition. In several of these cases their action was decidedly prejudicial, and in not a few the patient came near dying from suffocation.

No patient, our author remarks, is safe as long as the foreign body remains in the wind-pipe. Should symptoms of bronchitis or pneumonia supervene, they should be treated by the ordinary remedies. The spasmodic cough, so often present, is more promptly allayed by a sup of cold water than by any other means. If the foreign body should happen to be expelled, he cautions the practitioner not to suppose all danger past, as several instances have occurred where death by pneumonia has supervened in a short time afterwards.

Chapter 8.—Numerous means besides operation have been resorted to, of late years, to promote the expulsion of foreign bodies from the air passages. One of these is inversion of the body. While inverted, the chest and back of the patient are repeatedly and smartly struck with the hands, or with a pillow, to dislodge the offending substance and propel it through the glottis. Several successful instances are given of this mode of procedure. The objection to it is the risk incurred from suffocation. The author advises that a preliminary opening into the trachea be made, as, without this precaution, fatal consequences may ensue. The successful cases recorded are all of heavy bodies, bullets, shot, or coins. Numerous cases are also mentioned in which this experiment was of no use.

Chapter 9 treats of the surgical treatment of these accidents. The only real safety in such cases, consists, according to our author, in bronchotomy. There are exceptions to the rule, but these should not affect our practice. The foreign body is frequently expelled as soon as the wind-pipe is properly opened, being often projected to a considerable distance. Occasionally, the ejection is delayed for weeks or even months after the operation, and, the wound closing, a second, and even a third operation may become necessary, several instances of which are related.

Owing to the uncertainty of the diagnosis of foreign bodies in the larynx, the author thinks that this portion of the tube should seldom be opened if it be possible to employ tracheotomy. This latter is mentioned as being a most formidable operation, particularly in children with thick, short necks. He says, "I hardly know an operation in all surgery that I would not rather undertake, than this, under such circumstances." His experience has satisfied him that chloroform greatly facilitates its performance.

Numerous and full observations concerning the proper mode of operating; how the foreign body should be extracted and what instruments should be used; the various dangers to which the patient is exposed; the dressing and after-treatment, and the mortality attendant on the operation, take up the rest of the chapter.

Chapters 10, 11 and 12, are filled up with tables and descriptions of cases of laryngotomy, tracheotomy, and laryngo-tracheotomy. 13 cases of the former, 60 of tracheotomy, and 10 of laryngo-tracheotomy are related, where the expulsion of the foreign body was followed by recovery. 4 cases of laryngotomy, 8 of tracheotomy, and 3 of laryngo-tracheotomy were followed by the death of the patient.

In *chapter 13,* three cases are related where the operation of bronchotomy was performed in two instances twice, and in the third, three times. Two of these cases terminated fatally.

In *chapter 14,* several cases of tracheotomy are given, in which no foreign body was found. These cases, it is thought, are much more numerous than our records would lead us to suppose, as many surgeons are very averse to publishing their unsuccessful cases.

Chapter 15 is devoted to the consideration of cases of death without operation, and without expulsion of the foreign body. 21 of these cases are related; many, if not all of them, might have recovered under an operation.

Tracheotomy has been occasionally performed on the inferior animals, instances of which are given in *chapter 16.* The author regrets that such a proceeding is not more frequently resorted to.

A general summary of the whole subject, containing the conclusions which may be fully and legitimately deduced from a consideration of what he has given us, arranged under diagnostic,

pathological, therapeutic and operative heads, occupies the last chapter.

The field of enquiry taken up by Dr. Gross, has been hitherto so much neglected, that the thanks of the profession are largely due him for the zeal and care which he has expended on its cultivation. His observations, throughout, are characterized by sound sense, and will still further enhance his reputation as a most judicious and instructive writer. We earnestly recommend its perusal to the profession. The work is courteously and deservedly dedicated to Dr. Norris, of Philadelphia.

Puerperal Fever as a Private Pestilence. By OLIVER WENDELL HOLMES, M. D., Parkman Professor of Anatomy and Physiology in Harvard University. Boston: Ticknor & Fields, 1855.

"This essay," says the author in his introduction to the republication, "was read before the Boston Society for Medical Improvement, and at the request of the Society, printed in the New England Quarterly Journal of Medicine and Surgery for April, 1843. As this journal never obtained a large circulation, and ceased to be published after a year's existence, and as the few copies I had struck off separately were soon lost sight of among the friends to whom they were sent, the essay can hardly be said to have been fully brought before the profession."

To Dr. Meigs' lately published work on puerperal diseases, we are indebted for the republication of this excellent and useful pamphlet. The author, with an industry and zeal worthy of all commendation, has collected and arranged a mass of evidence in favor of the sometimes contagious nature of puerperal fever, which we believe and hope will go far towards acting as an antidote to the baneful teachings and theories of the Jefferson and University Professors of Obstetrics, upon this subject. The opinions of Drs. Meigs and Hodge, as individual practitioners, might with propriety pass without challenge or remonstrance, but in their capacity of teachers, lecturing as they do, annually, to upwards of 1000 students, and thereby promulgating their doctrines, however unsustained, to every section of this vast country, they rise to an importance which renders it the bounlen duty of every man, who thinks otherwise, to speak his

antagonism boldly, however unpalatable to cliques and coteries, and make it heard in every quarter of the land.

Dr. Wendell Holmes has nobly fulfilled this obligation. He has collected a mass of evidence on the subject which cannot be slighted; he has arranged his materials admirably, and followed the statements up by a course of clear logical reasoning, not the less acceptable for being expressed in a polished, scholarly style. The thanks of the profession are due to this gentleman for the re-publication of this brief work; its moral tone and right honest expression of opinion are alike honorable to its author, and elevating to the profession, which is bound thoroughly to weigh its testimony before rejection. Were it a mere jumble of unsupported theories, or had the author, after the fashion of some of his contemporaries, made his facts for the especial convenience of a theory, its consignment to an eternal repose, with many of its generation, would have been strictly just; but sustained as it is, by a long array of illustrious authorities, and by clear logical deduction, sarcasm is futile, and contempt entirely misplaced. Dr. Wendell Holmes carries heavy metal, which will make itself heard and respected even by those great guns that, in full target practice, matutinally explode to five hundred promising young gentlemen.

We do not propose to review Dr. Holmes' pamphlet systematically, or even to indulge largely in quotations; it must be read to be fully appreciated. The following passage, however, so perfectly coincides with our own sense of right, that we cannot resist the inclination to favor our readers with it.

"If the physician does not at once act on any reasonable suspicion of his being the medium of transfer, the families where he is engaged, if they are allowed to know the facts, should decline his services for the time. His feelings, however interesting to himself, should not be even named in this connection.

A physician who talks about *ceremony* and *gratitude*, and *services rendered* and the *treatment he got*, surely forgets himself; it is impossible that he should think of these small matters, where there is even a question whether he may not carry disease and death and bereavement into every one of 'his families,' as they are sometimes called."

The original, as it appeared in the New England Quarterly Journal, has not been altered in a single syllable, but some twelve pages of an excellently written introduction have been

published along with it, part of which is devoted to Dr. Meigs and his book on Puerperal Diseases, and part to a discussion on Contagion ; both subjects are artistically handled. The following passage, in which the author alludes to the cavalier mode in which Dr. Meigs flattered himself he had put him out, is a good specimen of his style.

"One unpalatable expression I suppose the laws of construction oblige me to appropriate to myself, as my reward for a certain amount of labor bestowed on the investigation of a very important question of evidence, and a statement of my own practical conclusions. I take no offence and attempt no retort. No man makes a quarrel with me over the counterpane that covers a mother with her new born infant at her breast ! There is no epithet, in the vocabulary of slight and sarcasm, that can reach my personal sensibilities in such a controversy. Only just so far as a disrespectful phrase may turn the student aside from the examination of the evidence, by discrediting or dishonoring the witness, does it call for any word of notice."

Coincidence is the resource of those gentlemen who maintain that puerperal fever cannot be conveyed to its victims by the nurse or attending physician. Of course, Dr. H. has no difficulty in showing the utter weakness of such a position ; and in reply to the argument of Dr. Meigs, that a contagious disease needs time for incubation, and that the sudden appearance of the dangerous symptoms in child-bed fever preclude the possibility of its being caused by contagion, mentions numerous instances of the fearful suddenness of some contagious visitations ; where the patients were struck down by disease not an hour after having come for the first time in contact with its cause. Instances might have been cited where the germs of the same malady (typhus) have lain dormant in the system for many days. Who can explain the reason of this difference ? The bite of the rattlesnake acts almost instantaneously, and has destroyed life in three hours, while the virus of hydrophobia will incubate, as it called, for months. Can all the medical colleges put together tell us why ? In the face of such strange variety and seeming contradiction who can pretend, by analogy, to satisfy himself of what contagion is, or what it is not ?

Our author says :

"If the medical theorist insists on being consulted, and we see fit to indulge him, he cannot be allowed to assume that the alleged laws of

contagion, *deduced from observation* in other diseases, shall be cited to disprove the alleged laws *deduced from observation* in this."

Again, speaking with reference to the communication of the disease by third parties :

"It is not necessary to consult any medical theorist as to whether or not it is consistent with his preconceived notions that such a mode of transfer should exist."

These remarks are such self-evident truths that they require no comment.

Dr. Wendell Holmes closes his introduction with the following remarks :

"I trust that I have made the issue perfectly distinct and intelligible ; and let it be remembered that this is no subject to be smoothed over by nicely adjusted phrases of half assent and half censure divided between the parties. The balance must be struck boldly, and the result declared plainly. If I have been hasty, presumptuous, ill informed, illogical ; if my array of facts means nothing ; if there is no reason for any caution in the view of these facts ; let me be told so, on such authority that I must believe it, and I will be silent henceforth, recognizing that my mind is in a state of disorganization. If the doctrine I have maintained is a mournful truth ; if to disbelieve it, and to practise on this disbelief, and to teach others so to disbelieve and practise, is to carry desolation and to charter others to carry it into confiding families, let it be proclaimed as plainly what is to be thought of the teachings of those who sneer at the alleged dangers, and scout the very idea of precaution. Let it be remembered that *persons* are nothing in this matter ; better that twenty pamphleteers should be silenced, or as many professors unseated, than that one mother's life should be taken. There is no quarrel here between men, but there is deadly incompatibility and exterminating warfare between doctrines. *Coincidences* meaning nothing, though a man have a monopoly of the disease for weeks or months ; or *cause and effect*, the cause being in some way connected with the person ; this is the question. If I am wrong, let me be put down by such a rebuke as no rash disclaimer has received since there has been a public opinion in the medical profession of America ; if I am right let doctrines which lead to professional homicide be no longer taught from the chairs of those two great Institutions. Indifference will not do here ; our Journalists and Committees have no right to take up their pages with minute anatomy and tediously detailed cases, while it is a question whether or not the 'black death' of child-bed is to be scattered broadcast by the agency of the mother's friend and adviser. Let the men who mould opinions look to it ; if there is any voluntary blindness, any interested oversight, any culpable negligence, even, in such a matter, and the facts shall reach the public ear ; the pestilence carrier of the lying-in chamber must look to God for pardon, for man will never forgive him."

An Inquiry into the Pathological Importance of Ulceration of the Os Uteri, being the Croonian Lectures for the year 1854.
By CHAS. WEST, M. D., &c., author of "Lectures on the diseases of Childhood and Infancy." Philadelphia, Blanchard & Lea, 1854.

The opinion that ulceration of the os uteri is the first in a succession of processes which occasion uterine pain, menstrual disorder, leucorrhœa and other affections of the generative system, being a question on which the profession was much divided, induced our author to put the matter to the test of a rigid inquiry, that he might establish, if possible, its truth or error. The numerous arguments, analogies and facts brought to bear upon the discussion of this question, are arranged under four principal heads, as follows :

"In the *first place*, we may inquire how far these statements receive confirmation from what we know of the anatomy and physiology of the uterus in a state of health.

Still, what answer soever we may receive to this question, it cannot, from its very nature, be conclusive; it may render a certain occurrence probable or improbable, may substantiate or disprove the correctness of certain opinions or explanations, but cannot invalidate the evidence of positive facts.

In the *second place*, we may try to ascertain whether examination of the dead body shows the morbid conditions of the os uteri which have been described to be frequent or rare, slight or extensive; and we may also endeavor to make out what connection subsists between ulceration of the mucous membrane of the os and cervix uteri, and other changes in the tissue of the organ.

It must, however, be borne in mind that many evidences of disease, such as are very obvious during life, may be greatly obscured, or may even entirely disappear after death: and further, that uterine disorders of the class which we are considering, though exceedingly painful, and seriously interfering with a woman's health and comfort, are yet not of a kind to prove the direct occasion of her death. Evidence derived from this source will therefore be open to the objection that it understates both the frequency and the importance of these diseases.

We may inquire, in the *third place*, whether there is any condition in which ulceration of the os uteri comes under our notice unconnected with other disease, and with such circumstances as to admit readily of our observing its character and watching its course and consequences. Such a state of things presents itself to us often in the case of the pro-
minent uterus, since the irritation to which the displaced organ is unavoidably exposed has the almost invariable effect of producing ulcera-

tion of the surface of the os uteri, and the immediately adjacent parts of the organ.

But, whatever conclusions we may deduce from this source they are open to all the objections inseparable from analogical reasoning. The probabilities of certain occurrences taking place in the uterus under other circumstances may be increased or weakened ; but the evidence still falls short of absolute proof, either of the affirmative or of the negative of the question.

The *fourth* and most important inquiry of all concerns the frequency of these ulcerations of the os uteri under those circumstances in which they ordinarily come under our notice, and call, or are supposed to call, for our interference. This inquiry, however, must include not only the frequency of ulceration, but also the conditions generally associated with it, and the symptoms to which it commonly gives rise. If the alleged symptoms of ulceration are found to be not rarely present without ulceration is discovered, even where there are no symptoms; or if, in the same case, the ulceration may vary in extent, with no corresponding change in the symptoms; if an indurated state of the cervix exists without ulceration, and ulceration, even of long standing, without induration—the conclusion, especially if supported by the answers obtained to our previous inquiries, seems to me irresistible, that the importance of inflammation of the cervix and of ulceration of the os uteri has been overstated ; that they are not the cause of all the symptoms which they have been alleged to occasion, and that, in the treatment of uterine disease, many other considerations must influence us more than the mere removal of ulceration of the orifice of the womb.

If this were proved, it would still remain for us to consider whether, in any case, we may fairly look upon the ulceration of the os uteri as a symptom calling for distinct recognition and special treatment. There are, I am aware, some persons of deserved repute who will look upon this inquiry as superfluous ; but, for my own part, I do not conceive that, even if we arrived at a conclusion never so unfavorable to the supposed great importance of ulceration of the os uteri, we should be thereby entitled to regard its symptoms as a mere delusion, its very existence as little more than a figment of the fancy."

The discussion of the above questions occupies the first two lectures. The third lecture takes up the various causes of uterine ailments. These are shown to be frequently independent of local disease, as in the case of chlorosis, of hepatic disorder, of granular disease of the kidneys, or where the affection is dependent upon the rheumatic or gouty diathesis; ulceration of the os uteri, when present in such cases, as well as in those where disease begins in the uterus itself, as in the affections following pregnancy, abortion, delivery, &c., being shown to be of very slight and secondary importance.

To meet the objections which might reasonably be urged against the above opinions, viz.: that experience has proved that the application of caustic to the os uteri has been followed by very successful results, and that, too, where relief has been vainly sought by other methods, Dr. West suggests numerous explanations, for which we must refer our readers to the work itself.

The injurious effects resulting from the doctrine and practice so ably combatted by Dr. West, are undoubtedly great. We firmly agree with the author that the belief in such a condition as the cause of so many and important mischiefs, is calculated, in fact, must naturally tend to relax the efforts of the practitioner to investigate closely these different affections and their consequences. "He unlearns," as Dr. West very truly remarks, "what physiology might teach him of the uterus and its functions, and sees in all its various manifestations of disorder, the expression of one fact, and one fact alone; namely, the existence of ulceration of its womb and its reactions, first on the uterine system, then on the general health." The very general acceptance of Dr. Bennett's views by the profession, has thus produced a routine practice in these diseases, which has much retarded the progress of true science. Nor should such a result be wondered at; the very simplicity of the pathology inculcated and the easy application of the remedy, involuntarily and forcibly commanding themselves to every one desirous of obtaining a ready solution of these often intricate affections.

Nor should we forget to take into account the physiological reaction of the doctrines spoken of upon the susceptible temperament of woman. So important to the mind of almost every female, arrived at the age of discretion, is the rôle played by her sexual system, in the production of disease, that she readily becomes an adherent to the idea that ulceration of the womb is the source of all her uterine troubles. Sinbad's old man of the sea clung not more tenaciously nor more oppressively to his victim, than does this hateful incubus to her disordered imagination, when she is once possessed by it. The mischievous results of such an engrossing, absorbing idea are so admirably and strongly depicted by our author that it must, hereafter, be impossible to ignore its importance, both in the confirmation and augmentation of her disease.

The innate and thorough loathing with which every right-minded woman must regard the introduction of a speculum into her vagina, with all its attendant mortifications, is another very serious objection to such a proceeding. No lower deep of degradation can well be imagined by a young and innocent mind, than that of having her person thus exposed and commented upon by others. Every instinct of her nature must revolt at such an outrage. Nothing but the most positive necessity can be pleaded as the practitioner's justification for such an act. That it is frequently done, however, where there is no such necessity, we have not a shadow of a doubt. We are happy, under such circumstances, to have such an authority as that of our author, in stating "that the importance of inflammation of the cervix, and of ulceration of the os uteri has been overstated; that they are not the cause of all the symptoms which they have been alleged to occasion; and that, in the treatment of uterine disease, many other considerations must influence us more than the mere removal of ulceration of the orifice of the womb."

The style and language of the lectures are fully worthy of the high reputation of the author. Though discussing a question on which there has been much intemperate expression of opinion, their tone is calm, courteous and gentlemanly. We cannot recal to mind, in fact, any controversial work, which, in this respect, is more deserving of imitation. With the most unfeigned respect for the talents and high character of the author, we sincerely wish for his Croonian Lectures, what they so richly deserve, an extensive circulation.

Report of the Select Committee of the Senate of the United States on the sickness and mortality on board Emigrant Ships. Washington: Beverly Tucker, Senate Printer. 1854.

The Report under consideration is one of grave significance, showing as it does that a large amount of human life is annually sacrificed by the ignorance or cupidity of ship-owners on both sides of the Atlantic. Of no more importance in the eyes of the shipper and his employés than a bale of merchandize, the poor emigrant, frequently predisposed to disease by sorrow and privation, is remorselessly thrust into a space, the cubic dimensions

of which, in many instances, hardly exceed that allotted to the dead, where the slightest modicum of pure air never enters, and with just sufficient light to render darkness visible. Thus "cribbed, cabined and confined" in their sub-aqueous abode,* eating scanty and half-cooked rations, the exhalations from their lungs and skin, and too often the more offensive excretions of their bodies accumulating around them, it does not surprise us to learn "that of those who embark for an Atlantic voyage on any one of a certain class of ships, one in every twelve of them but steps into a coffin, and nearly nine per cent. will either never reach the promised land or will die soon after."

The diseases which thus almost decimate the steerage passengers *in transitu* between the eastern and western shores of the Atlantic, are those terrible zymotic scourges, typhus fever, cholera and small pox; typhus being the one to which the emigrant is most liable. If the influences which originate these maladies, or form the chief fuel for their devastating flames, were beyond the ken of the profession, then could we only mourn the impotency of our science; but it being notorious that typhus fever acknowledges no other habitat, and that cholera and small pox commit their most frightful ravages among those subjected to the hygienic privations we have declared to exist in many emigrant ships, we cannot but express our unqualified censure of the owners of such vessels, who, for the sake of a few dollars, would thus consign nine in every hundred of their fellow men to certain death.

That enlightened legislation can easily check this undue mortality it is needless to say, and it certainly is the duty of physicians to urge it. At least 250 cubic feet of space should be allotted to each adult passenger, and a thorough ventilation, and strict cleanliness of person and berth enforced. Both sexes should be compelled to remain as much as possible "on deck," and the beds and bedding should be daily exposed to the open air. The food should be cooked *for*, not *by*, the passengers, and its quality be better than the present law requires. The

*Many passenger ships have three decks, the lowest of which, or the "orlop deck," lies immediately above the kelson, and is thus completely sub-aqueous.

services of a qualified physician we consider indispensable, and he should be assisted by at least two experienced nurses. These are the chief sanitary regulations necessary for the object in view, and as they are not only practicable but of easy application, we earnestly trust that the government of the United States will promptly enact such laws as will enforce their universal observance.

What to Observe at the Bed-Side, and after Death, in Medical Cases. Published under the authority of the London Medical Society of Observation. Second American, from the Second and enlarged London Edition. Philadelphia, Blanchard & Lea.

We are glad to see that the above most useful and complete work—which should, bye the bye, be in the hand of every practitioner in our country—has reached a second edition. It is creditable to the Profession to find such a book properly appreciated.

The publishers deserve praise for the excellent style in which it is issued. Its paper and type are unexceptionable.

Principles of Physiology; designed for the use of Schools, Academies, Colleges and the general reader. Also, an essay on the Preservation of Health, with fourteen quarto plates, and over eighty engravings on wood, making in all nearly two hundred figures. By J. C. COMSTOCK, and B. N. COMINGS, M. D. New York, S. S. & W. Wood, 1855.

The above work is well adapted to the use of the general student. It will be found to present clear outlines of a subject that should be an essential branch of every one's education.

THE MEDICAL EXAMINER.

PHILADELPHIA, MARCH, 1855.

MEDICAL NEWS.

We regret to observe that Drs. D. J. Cain and F. Peyre Porcher have retired from the editorship of the *Charleston Medical Journal and Review*. Their loss will be widely felt by the profession. Dr. C. Happoldt, who has afforded material aid to the Journal for the last eighteen months, and who is otherwise favorably known to its readers, has assumed the management of the Journal. We heartily wish him success in his undertaking.

Dr. George Stevens Jones has resigned his editorial connection with *The Boston Medical and Surgical Journal*. The Editorial duties of the Journal will hereafter be assumed by Drs. Wm. W. Morland and Francis Minot. These gentlemen are well known to the profession and we are confident that the Journal will present even increased attractions in their hands.

Dr. Bennet Dowler, whose charge of *The New Orleans Medical and Surgical Journal* has just expired, proposes to issue a Quarterly Journal in May next, to be entitled *The New Orleans Quarterly Journal of Medicine*. Each number will contain two hundred and sixteen pages, octavo. We earnestly hope that this project, for which Dr. Dowler's industry and abilities so well fit him, will prove a successful one.

To an obituary notice, extracted from the *London Lancet*, of Dr. Golding Bird, by one of our cotemporaries, the following editorial comments are attached: "To which we may add that Dr. G. Bird was the author of works of a lighter nature, as "Nick of the Woods," and other novels which are well known." Our esteemed cotemporary is no ornithologist, or he would be aware that there are many kinds of Birds. The one he alludes to, the author of "Calavar," &c., was a native of Philadelphia.

In the Record Department of the January number of our respected cotemporary *The Western Journal of Medicine and Surgery*, Dr. Mason's

paper, entitled "Case of Rupture of the Uterus, &c.," is incorrectly accredited to the operator, Dr. John Neill. The usual credit, also, is not given; both of which oversights we have no doubt will be corrected.

Dr. Moreton Stillé has been elected to the post of Lecturer on the "Theory and Practice of Medicine," in the Philadelphia Association for Medical Instruction, a position ably and satisfactorily occupied for many years by Dr. J. Forsyth Meigs. We congratulate the Association upon the excellent choice they have made.

The following gentlemen have been duly appointed to represent the College of Physicians at the meeting of the American Medical Association: Drs. G. B. Wood, J. Rodman Paul, Isaac Hays, John Neill, F. G. Smith, Bernard Henry, E. Hartshorne, G. W. Norris, Franklin Bache, R. A. Given, Francis West, P. B. Goddard.

The St. Joseph's Hospital, of this city, has elected Dr. Alfred Stillé as its delegate to the American Medical Association.

Dr. Séguard.—The numerous friends of this gentleman will be pleased to see, from the accompanying letter, that he has arrived in this country, and assumed the physiological chair in the Medical College of Virginia. His continued investigations, with regard to the functions of the pneumo-gastric nerves, have afforded results which are now, for the first time presented to the public:

RICHMOND, January 21st, 1855.

DEAR DOCTOR:—Will you have the kindness to give room to the following lines in the next number of your Journal?

I wish to *take date* of the discovery of two important facts relative to the physiology of the pneumo-gastric nerves.

I had already found and published that these nerves are the motor nerves of the vessels of the heart; I have since found that they are also the principal (if not the only) motor nerves of the small vessels of the lungs. This view is founded on the following facts:

1st. The section of the pneumo-gastric nerves, in the cervical region, is followed by the dilatation (or paralysis) of the small vessels of the lungs, as well as it is by the dilatation of the vessels of the heart.

2d. The galvanization of these nerves in the cervical region, after they have been carefully separated from the sympathetic, produces the contraction of the vessels of the lungs, as well as that of the vessels of the heart.

I will prove elsewhere that the dilatation of both the vessels of the lungs and those of the heart, which follows the section of the pneumogastric nerves, is the first and principal cause of the death, which is the constant result of this operation. Yours, very cordially,

E. BROWN SÉQUARD, M. D.,

Dr. McCaw

Prof. Inst. Med. etc. in the Med. Col. of Va.

Virginia Med. and Surg. Journal.

RECORD OF MEDICAL SCIENCE.

On Fracture of the Skull. By JAMES SYME, Esq., Professor of Clinical Surgery in the University of Edinburgh.

This young man, John W——, aged twenty-three, was at work at a flour-mill in Kirkaldy on the 25th of July last, when a fourteen pound weight fell from the fourth story, and struck him on the head, about an inch and a half from the vertex, where you now observe a depressed cicatrix. On his admission here, I found a depressed fracture of limited extent, and, on removing with bone-pliers the fragments of the outer table, discovered a circular portion of the inner table, of much larger size, which I succeeded in extracting piecemeal through the opening in the outer table. He was conscious at the time, and has ever since been in the full enjoyment of his intellectual faculties. The wound was simply dressed, and went on favorably until its contraction produced inversion of the edges of the scalp, when the hairs growing into the wound prevented further cicatrization, till I pared away the inverted edge a few weeks ago, after which the wound soon healed completely.

In such cases as this there is no reproduction of bone in the central part of the cicatrix, which is intimately adherent to the dura mater; and though it becomes after a time exceedingly dense, yet it is prudent for the patient to wear some sort of protection if liable to be exposed to external violence.

I may take this opportunity, gentlemen, of remarking that injuries of the head have long been a fruitful subject of bad practice and traditional error. In the olden times injury of the head, accompanied with insensibility, was thought to require scalping of the part, so as to allow a thorough examination of the bone, when, if a fissure was discovered, the trephine was applied, under the idea that noxious transudations were liable to pass from without inwards. Even in cases where there was no evidence of cerebral disorder, it was the practice to remove any flap of the scalp that might have been torn up from the cranium. So lately as the time of Charles II., we find it mentioned in the valuable cases recorded by Wiseman, then sergeant-surgeon, that a surgeon who had cut off a large flap of skin in these circumstances was so proud of

his performance, that he hung up the piece of scalp in his shop, to show what a great operator he was. Even in recent times, whenever injury of the head produced loss of consciousness, it was the practice to bleed largely immediately after the accident.

All these errors have now been disposed of, but something still remains to be cleared away. You have, no doubt, all of you heard of the operation of trephining, and have read that it is required under the following circumstances: first, when purulent fluid exists between the bone and the dura mater; second, when blood has been effused from the main artery of the dura mater; third, when the bone is depressed injuriously: and you will perhaps be somewhat surprised when I tell you that, if you except the case of punctured fracture of very small size, such as a sharp-pointed instrument would produce, trephining is never of any service. Take first the cases of effusion of matter and of blood. Though I have been now nearly thirty-five years connected, in one way or other, with this hospital, I have never known a single case where blood or matter has been withdrawn with a satisfactory result; indeed, I have never seen blood withdrawn at all by trephining, nor did I ever find a surgeon who had met with such a case. You will therefore do well to regard trephining under these circumstances as an operation that does not at all concern you. Also in depressed fracture, if you except the special case of small puncture, you will find trephining never necessary. If the bone is broken, it is so much so that it can be elevated by bone-pliers. Make a crucial incision in the scalp, and raise the flaps; try different parts with the bone-pliers till you can raise a small portion; cut off bits of the overhanging edge, if necessary, and you will be able to complete the elevation of the whole. If the bone has not injured the dura mater, the patients generally recover; if the longitudinal sinus is injured, they die, so far as my experience goes, although there appears no special reason why injury of this venous channel should be so much more serious than that of others, and cases of recovery have been recorded. If the dura mater has been injured so as to expose the brain, the case is very unfavorable; and if the brain itself is injured, it is almost hopeless. I say, *almost* hopeless, for it is not entirely so. A little more than a year ago a fire occurred in the Cowgate, which, as you know, is an old street of lofty houses. The occupiers of the fourth story threw out their valuables into the street, and, amongst the rest, a child four years old. It appeared to have fallen on its head, and had injured one parietal bone, over which a soft tumor existed. One day passed, and next day it appeared that some epileptic seizures had occurred, which, on the following day, became almost continuous, the child being scarcely out of one fit before another came on. I thought it right to open the tumor, and on my doing so, blood issued, and a wide crack appeared in the parietal bone, which had given exit to a quantity of cerebral substance, the appearance altogether being so frightful that I did not complete the incision, but regarding the case as hopeless, sent the child to bed with a piece of wet lint on the wound. However, the convulsive attacks ceased from that time forward; the child showed

signs of intelligence within two hours; on the third day it was sitting up, with a smile on its countenance; and in a fortnight after the operation it was running about the ward. I learned a short time since that this child was in the most exuberant health. But such cases are unfortunately quite exceptional.

I may remark, as we have happened to speak on this subject, that epileptic attacks sometimes come on months or years after injuries of the head; and you may perhaps be called upon to "do something for the patient," as it is said—that is to say, to trephine the skull. I have myself on several occasions exposed the bone and removed portions in such cases; but, from the results which have followed, I advise you positively against such a course. The case is different, however, if a sinus continue in connexion with a sharp piece of bone pressing on the brain. I once operated on such a case, and some years afterwards had the satisfaction of seeing the patient in perfect health. The case is thus reported in the tenth Report of the Edinburgh Surgical Hospital for 1833, (*Edinburgh Medical and Surgical Journal*, No. 115.)

Wm. K——, aged twenty-two, from Dunfermline, admitted 3rd September. Between six and seven years ago he suffered a very severe wound of the face from the blasting of a rock. He was at first insensible, and considered in a hopeless state, but gradually recovered so as to be able to follow his employment as a weaver. A small opening, however, between the cheek-bone and ear continued to discharge matter, and he occasionally suffered much pain in his head. During the last four months he had had occasional epileptic fits. On examination, it appeared that the malar bone had been fractured, and the whole upper part of the face was occupied by a dense cicatrix. A piece of bone was felt at the bottom of the sinus, bare, and lying obliquely in respect to the surface of the skull. On the supposition that this was a portion of the cranium which had been depressed at the time of the injury, a crucial incision was made through the cicatrix, to expose the aperture of the skull, which was then enlarged by means of cutting-forceps, so as to admit the extraction of the loose piece. It comprehended both tables of the bone, (temporal,) and was about a third the size of a sixpence. The patient expressed much relief after the operation; but the fits still recurred, though seldom, and a profuse discharge issued from the wound. A probe being gently introduced, entered to the depth of two inches perpendicularly, the substance of the brain seeming to have been hollowed out into an abscess. He returned home, and continues in the same state, though, on the whole, improved.—*London Lancet*.

Ulceration of the Legs. Clinical Lecture, delivered at St. Bartholomew's Hospital on Friday, January 12th. By FREDERIC C. SKEY, Esq., F.R.S., Surgeon to the Hospital.

GENTLEMEN,—I propose, in the ensuing lecture, to direct your attention to a group of cases that have recently come under treatment in the wards that have been placed under my charge by the treasurer of the

hospital. They are those of chronic ulceration of the legs, and, for the most part, occurring in persons of advancing years. There are few persons attending the practice of our London hospitals who are not alive to the frequency of this form of disease. Our out-patients, as well as our dispensary receiving-rooms, teem with them; it may be truly said, their name is legion, whether in town or country. There is no disease so universal as the chronic ulcers of the leg in the lower classes of society, and, for reasons that I shall presently state, to this class are they almost exclusively confined. Eighteen years have elapsed since I published a small pamphlet on the treatment of this most common but troublesome malady. After eighteen years, a wider field of observation is open to me, and I have rejoiced in the opportunity of testing the truth of the views I then promulgated. They have been tried, and I am confirmed in their truth, and the result of that evidence I now proceed to place before you.

[The following cases are drawn up by Mr. Stanwell, Mr. Skey's house-surgeon :]

W. G.—, aged forty-one, admitted under Mr. Skey into Harley ward, on November 9th, 1854. On the left leg, on its inner aspect, was a large indolent ulcer, with very prominent white edges. He had been troubled with this for several years, and been unimproved by treatment. The ulcer was about the size of a crown-piece. He took the common diet, with a pint of porter daily, and soap-and-opium pill, five grains at night. The alteration which even two doses of the pill made in the appearance of the ulcer was as remarkable as it was beneficial. The granulations (before pale, flabby, and extremely unhealthy) were red, small, and covered with a thin layer of healthy pus; the edges, before unhealthy and white, were level with the granulations. The last change was, however, assisted by the application of strapping and bandage. He progressed favorably. The ulcer nearly healed, until November 28th, when, with another patient in the ward, he was seized with phlebitis. The ulcer now rapidly lost ground. Under tonic and stimulating treatment he again got better, and is now in Abernethy ward almost convalescent.

G. C.—, aged fifty-nine, was admitted into Harley ward on the 9th of November, 1854. He had suffered for many years from numerous small ulcers on the left leg and foot, for which, as a means of cure, and as a last resource, amputation was deemed advisable. The ulcers, on admission, presented a most unhealthy aspect; deeply excavated; white, overhanging margins; pale, flabby granulations, from which a thin, sanguous discharge issued. On admission, he was ordered the common diet of the hospital, and a pint of porter daily. Ordered, confection of bark, two drachms, three times a day. Acetate of morphia two grains; simple cerate, a drachm,—as an external application to the ulcers. This treatment he continued till the 16th of November, when he took soap-and opium pill, five grains at night. This he continued till the 27th of November, when he began to take the pills three times a day, the effect on the ulcers being manifestly very good. He is now ly-

ng in Abernethy ward, gradually getting better, under the same treatment.

J. P——, a healthy-looking countryman, was admitted into Harley ward, on the 11th of November, 1854, suffering from a chronic ulcer of the left leg, which had for some years resisted all attempts to cure it. The man suffered a good deal from cold extremities. The ulcer presented the ordinary characters of the indolent class. Good diet, rest, and the internal administration of opium night and morning, in the form of soap-and-opium pill, rapidly converted the unhealthy granulations into red-pointed and cleanly secreting ones. After a short time, (on Nov. 30th,) he took half a grain of extract of opium night and morning, as the combination with soap seemed to relax the bowels. An attack of phlebitis, from which, under the treatment mentioned in the ward-paper, (Dec. 1st,) he recovered, checked the process of cure (which was rapidly going on) for some days. On its cessation, the ulcer again assumed a healthy character, and he was discharged on the 4th of January.

Emily S——, aged four years, was admitted into Treasurer ward on the 10th of November, 1855. About an hour before, a mail-cart had passed over her right foot and ankle, causing a severe and extensively lacerated wound of the dorsum and sole of the foot. In the former situation, the extensor brevis digitorum muscle, and the tendons of the extensors of the toes, were exposed. The integument and fatty tissue on the sole were much lacerated. The edges of the wound were brought into as accurate apposition as possible, and wet lint covered over the whole injured surface. The child progressed favorably, in every respect, until Nov. 16th, when erysipelas (at the time very prevalent) made its appearance, extending to the knee. The leg was wrapped in cotton wool, and a bread and water poultice applied to the foot. At the same time, she was ordered one grain of disulphate of quinine every two hours, and six ounces of wine daily. The inflammation gradually subsided, the quinine having been previously increased to two grains, and afterwards changed for tincture of cinchona, forty minims; aromatic spirit of ammonia, twenty minims, every four hours. The granulations on the surface of the wound, on Dec. 4th, appearing indolent and unhealthy, Mr. Skey ordered one grain of soap-and-opium pill every night. This has been continued since; strapping has also been employed; and the child remains now in the hospital, a happy example of the beneficial effects of opium on unhealthy granulating surfaces.

Mr. P——, a London merchant, aged sixty-six, tall and stout, had a chronic ulcer on his leg, nearly as large as the crown of a moderate-sized hat. It had been his companion for seventeen years. He applied to two eminent surgeons, who said that they neither could nor dared to heal it. The supposed evil attending the arrest of a long-standing wound in the system you must take for what it is worth; my faith is somewhat equivocal. I told him I could cure it, and I dared to cure it. It discharged immense quantities of foetid ichor, and had done so for years. Mr. P—— was almost excluded from the drawing-room of

his friends. I gave him half a grain of extract of opium night and morning, and I strapped his ulcer daily. In three days he expresssd astonishment at the altered aspect of his deeply excavated ulcer. In a week, I increased the dose to one grain. In forty-two days, this immense wound had healed to the size of a small watch. His health improved under the treatment. During the above period, he had taken no form of medicine but that I have mentioned.

Such is the treatment I have adopted in these cases of ulcer of the lower limbs; and you will naturally inquire into its principles and objects, for it is not sufficient that you learn the efficacy of a given remedy in any given disease. You are bound as students to inquire into the rationale, or the principle, of a remedy, that you may hereafter yourselves extend its application, and generalize on its influence, were it for no other purpose than that of comparing, classing, or distinguishing diseases; for it may not unreasonably be inferred that two or more apparently dissimilar diseases, which are amenable to the same remedy, must have at least some characters in common.

I venture to attribute to this remarkable drug the property of promoting the formation of healthy granulations on a surface that, notwithstanding all the previous appliances of surgery, is yet flat, pale, and ungranulating. Now, there is no example of the power of opium to effect this object, more conclusive, or in which there is more work to be done, than that form of disease of which I am speaking,—which consists of a gap formed on the surface of the body, of greater or less depth and diameter, and in which there exists not even a trace of a curative action,—and yet the object is accomplished by means of this agent, and often with remarkable celerity. We call opium a stimulant and sedative. As a stimulant, it is not very often employed in practice; while its properties, as a sedative, are well known, and are in daily requisition. Its property of mitigating pain and of promoting sleep, is that for which it is almost exclusively employed, and so completely is its action associated with this sedative principle, that its occasional influence as a stimulant is almost entirely lost sight of, and the stimulating property has merged in the supposed sedative. How otherwise can we explain the reasoning of Mr. Pott, whomay almost be termed the father of modern British surgery. In speaking of the subject of opium in the treatment of gangrena senilis, he refers its undoubted efficacy to its property of soothing pain. He says, "I have always found that whatever tended to calm, to relax, and to appease, at least retarded mischief, if it did no more."

But, in truth, pain, though common, is by no means an invariable concomitant of senile gragrene; and it is tolerably notorious that opium is a valuable remedy in all cases of this disease. How then, on what principle, does opium act in those numerous cases of senile gangrene that are destitute of pain, and in which it is an equally efficacious remedy?

I believe that its sedative properties have little concern with the result. In truth, opium is a most valuable stimulant of the vital powers, and whether its action originate with the centre or the periphery of the

circulation, whether primarily on the heart or on the capillary vessels, I do not pretend to know; but there is no drug, simple or composite, known to our pharmacologists that possesses an equal power with opium, of giving energy to the capillary system of arteries, of promoting animal warmth, and thus maintaining an equable balance of the circulation throughout the body. To maintain the balance of the circulation! How much of meaning is attached to these words! How many affections of the bodily frame may not be brought within the range of this definition! Take the common chilblain; what is it but a local congestion of blood caused by defective capillary power?—there is no better remedy than opium; cold feet, as characterizing a person or a constitution, equally relieved; senile gangrene, the result of arrest of the capillary circulation, or its apparent opposite, local hyperæmia—these diseases, one and all, manifest a loss of local power, a failure in the balance of the circulation. The term “inflammation,” a word formerly in the mouths of our professional brethren on all occasions, is now limited in its application, and should be yet more limited, and I believe, in a yet more advanced state of medical science, will be restricted to an actually rare condition of the system. The influence of opium in such conditions is that of promoting a genial warmth over the system, a glow exactly resembling, and in fact identical with, that produced by the reaction on the system which is caused by the cold-bath. *It is local health*, and the sensation is most agreeable. The benefit derived from opium, when administered for the purpose of arresting inflammatory action of the vessels, admits, I think, of much doubt, and should be resorted to with some hesitation as a remedial agent, though I am quite persuaded that the evil of its administration is greatly overrated. But who will profess ignorance in these days of the inestimable value of this agent when resorted to immediately after an attack of inflammation has been subdued by a local or general bleeding? Here we can imagine that, the activity of the disease being checked, the diffusing influence of opium on the circulation may act as a simple derivative, operating on the vessels at the moment they are not indisposed to yield up their blood, and to which indeed they are compelled by the diffusive power of the general stimulus.

Many years ago, and before the introduction of railway travelling, I was summoned late one afternoon to see a patient some eighty miles from London. I travelled outside the mail. This occurred in the month of December, and the night was extremely cold. By some mistake I omitted to bring my great-coat; and, for the first hour, I suffered a good deal. On reaching a town at some ten miles distance from London, I took the opportunity, while changing horses, to run across the street to a druggist's shop, where I ordered a draught, containing twenty-five drops of tincture of opium. I believe I was the only person outside the coach that night who did not suffer the slightest sensation from cold. But it will be urged by many, who have experimented on and who have observed less than I have done, the medical properties of opium, the infinite importance of studying the reactive effects of this deadly poison,

and they would inquire into the condition of a person so treated on the following day. You may be assured that it amounts to *nil*. You will, I am sure, readily understand what I mean when I say the cold and the opium mutually balanced and mutually neutralized each other. There could be no reaction, because the influence of the depressing agent—viz., the cold, rather than otherwise, exceeded in duration that of the stimulant. If the period of prostration were brief, and limited to one or two hours, the argument might hold; but it is but a sorry objection to be urged after all.

I wish I could impress on the minds of the medical authorities in the Crimea the real benefit that might be derived to our noble troops, beaten down by intense cold and suffering in its various forms, from the judicious administration of opium. If twenty-five or thirty drops of tincture of opium, in addition to his ordinary quantum of rum, were administered to each soldier whose nightly services are required in the trenches or on guard, you would hear little complaint of cold for that night, neither would it produce the smallest tendency to sleep. And what do you imagine would be the objection urged against the proposition? "You would destroy the efficiency of the entire army; you would corrupt their morals; you would engender the most enervating habits; they would all degenerate into professed opium-eaters; and in fact," say the alarmists, "the idea is preposterous." Here again I assert that no possible evil could result; the only sensation, present and future, would be the absence of cold. If cold beget suffering, opium is the antidote of that suffering, and the one will assuredly neutralize the other.

Notwithstanding the prejudices and the bigotry that have long beset the public mind on this subject, and from which our profession is not totally exempt, there is no comparison to be drawn between the practice of dram-drinking and the excessive indulgence in the use of opium. The man who indulges in spirituous liquors makes daily inroads on his digestive powers not less than on his brain. His appetite is destroyed, and the pabulum for his blood is withheld from his circulation. He is stamped for life, and his perfect health is irrecoverable. The influence of opium, when taken as a means of indulgence though deleterious, is not permanently injurious. It exercises no serious influence on his digestion or on his cerebral organs, and, the practice once controlled, leaves him in a condition to regain, without difficulty, the fullest vigor of both bodily and mental health.

I have related to you the particulars of several cases of chronic ulcer in which recovery was attributable to the medical properties of opium, and almost to opium alone. The character of these ulcers strongly marks the inactivity of their nature, and hence the class of society to which they belong. They are marked by a flat base, which indicates, by its pale, flabby uniformity of surface, that no reparatory action has approached it. It is often surrounded by a thick, high ridge of lymph, covered by unhealthy integuments. The depth of the ulcer, which may be seven or eight lines, is caused partly by the ridge, and partly by the excavation of the ulcer below the natural level of the healthy integuments. So long as this ridge exists, although granulations may form,

and will form, from the date of the employment of the opium, yet cicatrization will never complete the process of cure unless the wound or ridge be absorbed. Now the action of opium is not alone exhibited in the development of healthy granulations, but in the entire complement of such actions as are required by the sore—viz., the formation of new material, and the absorption of the old.

The influence of the stimulant is exhibited, therefore, not on one particular function. It does not merely promote secretion, but it stimulates to healthy vital actions in their entirety—viz., secretion, organization, and absorption contemporaneously; the granulations are secreted and organized, while the circumvallation of unsound material, the product of years of growth, is gradually absorbed and reduced to the level of the surrounding integument; for the removal of this wall is quite as indispensable to the ultimate result as the obliteration of the cavity by granulation. Without the two surfaces be brought to the same level, the process of cicatrization, or skinning over, will never be perfected.

If, therefore, we find that a disease like that I have described, and which exhibits so palpably a dormant condition of the remote capillaries, is amenable to this form of stimulant, which can only accomplish the cure by the substitution of healthy for morbid actions, why should we restrict its employment to this class of diseases? Why, as I have elsewhere inquired, may we not experiment with success on any local disease dependent on the same cause—viz., an inert condition of the remote vascular system?

In claiming for opium the merit of rousing into healthy action the dormant capillary system, to the end of accomplishing the permanent cure of the chronic ulcer of the legs in old persons, I by no means wish you to infer that I consider all other modes of treatment unworthy of trial. Indeed, I attach great value to that recommended by Mr. Baynton, of Bristol, and others; but, having tested their value, I have no hesitation in pronouncing that which I have recommended, so far as I am competent to judge, as by far the most certain and efficacious.—*London Lancet.*

Case of Tracheotomy. By J. M. MURDOCK, M. D., House Surgeon to
Bellevue Hospital.

The Editors of the New York Medical Times.

GENTLEMEN,—The following case is one in which I have taken much interest; and as it presents a new cause of suffocation, viz., *inspissated mucus in the trachea*, it may not be uninteresting to your readers.

Eliza Campbell, child, aged fourteen months, was admitted into this Hospital on Sunday, Dec. 10th, at 4 o'clock, P.M. The statement of the grandmother, who accompanied the child, was, that she had always been healthy, except the occurrence of a slight convulsion, three months previous, while teething. Since that time she has enjoyed good health, and on the day of the present attack was unusually bright and active; that about an hour previous to her admission, while playing with a piece of meat given her to suck, she was seized with a fit of coughing, and be-

came blue in the face. The child was then taken to a drug-store, and an emetic administered, which produced copious vomiting, but no relief to the dyspnoea. She was then brought to Bellevue Hospital.

When admitted, which was about an hour after the accident, she presented the appearance of being asphyxiated. The lips and face were of a venous hue; respiration was labored and hurried, and the crowing sound of croup was heard, during both inspiration and expiration. Dr. Sands, one of the house physicians, being the first who saw the patient, immediately introduced his finger into the pharynx without detecting any foreign body. He then passed a probang through the oesophagus, with the same result. The patient was failing so fast, that it was the opinion of all the members of the house-staff present, that unless respiration was re-established by an operation, death would soon be the result.

Accordingly, with the assistance of these gentlemen, I performed the operation of tracheotomy, the patient scarcely losing a teaspoonful of blood, and made search for the foreign body, but without success. She was so much relieved by the operation that it was thought proper to discontinue the search until rest was obtained. A silver canula was then introduced into the opening, through which the patient easily respired. She then sank into a quiet slumber, which continued, with slight intermissions, until 12 o'clock, a period of eight hours. At that time, respiration became more labored and hurried, probably from the fact that the foreign body had fallen from the larynx into the trachea, and had stopped at a point below the artificial opening. At 1 o'clock P.M., Drs. J. R. Wood and Sayre, visiting surgeons to the Hospital, saw the patient, and concluded to make further search for the foreign body. Accordingly, Dr. Sayre, by means of a silver probe, after a little search, succeeded in extracting from below the opening a small, hard substance, which, on further examination, was found to be inspissated mucus. After the removal of this foreign body, respiration again became easy, and hopes of permanent recovery were entertained; but in a few hours it became evident that the patient was sinking. The skin was hot; the pulse small, and 190 per minute, the respiration more labored than it had previously been, and 94 per minute. She died at 6 o'clock the next morning, thirty-eight hours after the accident.

On *postmortem* examination, both lungs, with the exception of the middle lobe of the right, presented the appearance of pneumonia in the second stage. This was probably caused by the congestion dependent on imperfect aeration of the blood. No foreign body was found in the larynx, trachea, or bronchi. I think that these appearances justify us in saying, that had the child been brought to the Hospital half an hour earlier, the operation might have preserved life.

Bellevue Hospital, Dec. 21, 1854.

MEDICINE IN HOLLAND.

Removal of an intestinal stricture. By DR. VAN DOMMELLEN.—P., aged 29, of a choleric temperament, a soldier, in the 6th Regiment of Infantry, and formerly in the East India army, was attacked at the end

of 1849, at Soerabaya, with dysentery, for which he was for three months under treatment in the Hospital of that place, and from which he recovered, but has since had extreme difficulty in passing faeces. In 1851, he was, according to his statement, set home on account of the constant recurrence of palpitations of the heart, which the Physicians attributed to the heat being more than he could endure. He remained at home as a citizen for a year, when he got himself received into the Militia ; but from the time he joined he was repeatedly admitted into Hospital, complaining of colicky pains. The peculiar appearance of the faeces immediately struck us ; they were, in fact, not thicker than the stem of a pipe, and long, like a small cord in the bed-pan. This was readily explained, on local examination ; the finger introduced into the rectum encountered, at a distance of eight centimetres, (3.1496 English inches,) from the anus, a ring-shaped septum, which did not admit the passage of even the point of the pipe of an enema syringe. This septum was tolerably tense, and was as hard as cartilage, especially round the opening.

After having in vain endeavored, by means of evacuants, laxatives, and enemata, to regulate the alvine discharges, I proposed operation, to which the patient at once consented. Everything which could be necessary during its performance having been prepared, and the rectum having been previously cleared out, he was placed as for lithotomy, and was steadily held in this position by assistants. I now introduced the index-finger of the right hand, smeared with cerate, into the rectum, and so far through the stricture that the opening rested exactly on the top of the finger. I afterwards, with my left hand, passed a long, slender, blunt-pointed bistoury, the end of which was protected by having lint rolled round it, along the index finger, to the stricture ; I then drew the finger a little backwards behind the knob of the bistoury, by which means the latter came exactly opposite the narrow opening, and so passed into it. I now turned the back of the bistoury towards my finger, and with the latter pressed upwards, successively to both sides, and downwards. Immediately these incisions were made, the constriction ceased, and the finger, with the bistoury, with great ease, glided further up.

As there was no haemorrhage of any consequence, no plugs were introduced, and the patient was merely recommended to keep perfectly quiet.

In the afternoon (seven hours after the operation) the patient passed some coagula of blood, mixed with serum, but without faeces. He also occasionally perceived a spasm in the sphincters, but was in other respects well. Early next morning he had a faecal evacuation, differing in no respect either in form or quantity from what would be passed by the most healthy man. He continued under my observation during a period of three weeks, and I had each day an opportunity of observing the beneficial effects of the operation. I met him three months afterwards, when he stated that he had had no return of his infirmity.

From the distance of this stricture from the anus, we thought that a decisive result was to be expected only from such an operation as that above described. The introduction of plugs of lint, of little bags to be

afterwards filled up with lint, or of bladders distended with air or fluid, would in this case have been ineffectual; the shortness of the canulas of Bermond de Bordeaux, which consist of cylinder over cylinder, and are only six centimetres (a little more than two and a-third English inches) in length, would prevent their being available; while, even if this were not the case, it would have been difficult, on account of the great exertion used in defecation, to retain the external cylinder in its position during the removal of the most internal necessary to admit of the discharge of that function; and, lastly, Costallat's instrument (a closed piece of intestine, introduced on a probe, and subsequently filled with lint) could scarcely have been introduced with the probe alone.

Dr. Van Munnikrede has described a case of medullary carcinoma of the femur—amputation—recurrence of the disease in the lungs—death.

The patient was a farmer, aged 41. The carcinoma had been slowly developed, and was probably the result of an external injury, received many years before on the outer side of the knee. When amputation was first proposed, the tumour was painless, and had not yet become softened, and the general health was undisturbed. The patient refused to submit to the operation, nor did he consent to it until six months later, when the swelling having become larger and painful, presented here and there fluctuating points; the leg and foot were oedematous and hot; the general condition was impaired; hectic fever, perspiration, and general emaciation were present; the patient had a cachectic aspect. Three months after the performance of the operation, which took place under chloroform, he was released from treatment, in an improved state of health, the principal functions being duly performed. On examining the amputated limb, it was seen that the tumour was formed by an extraordinary enlargement of the lowest portion of the femur, and that it belonged to Nelaton's third variety of osseous cancer, the so-called "spina ventosa." About six months after the operation, the patient returned with an affection of the lungs, which was diagnosed to be carcinoma, and under which he sank in four months from the time of his return. On opening the thorax, the lungs were found to be throughout the greater part studded with cancerous nodules, some of which were hard, while others had passed into the stage of softening. Permission was not obtained to examine the other cavities of the body.

Dr. Muntendam gives a short statement of the clinical results obtained by him as to the use of quina in phthisis pulmonalis. The number of cases briefly reported by him amounts to 22; by the denomination "phthisical," he understands those who labor under pulmonary tubercles, who, at the same time, are feverish, and whose febrile condition is dependent on the morbid process in the lungs. He thinks that, from his observations, he may infer: 1st. That quina administered with, and often without, acetate of morphia, is capable, in very many cases, of prolonging the lives of phthisical patients, and that it not unfrequently even saves them, if fresh depositions of tubercle do not again excite the morbid condition. 2nd. It is capable of prolonging life where the local process is not too extensive; when administered in the commencement

of the disease it may, especially in children, married and puerperal women, if circumstances are in other respects favorable, save life. 3rd. The frequency of the pulse does not diminish under the use of quina until later, after the assimilation is restored ; or it may also do so in a person laboring under pulmonary tubercle, who has been attacked with intermittent fever. 4th. The transient hyperæmias or determinations to the head, chest, or intestinal canal in these patients, do not contraindicate the use of this remedy. The fever for the most part disappears after some time, but is easily re-excited ; or the febrile attacks may be obstinate, and may require the administration of quina to be continued for some weeks. In acute, and in many chronic cases, the cough and expectoration are at first increased ; an indirect effect of the quina is also the recurrence of the menses ; the effusion in the lungs remaining, as œdema, or hydrops-fibrinosus, after the congestions have disappeared, is then expectorated under the form of a gelatinous, more or less frothy mucous mass, or as serum, together with, in chronic cases, globose, nummular sputa. 5th. Dietl justly observes, that the effect of quina on the organs of the circulation is unexplained. 6th. Sulphate of quina administered continuously, and in small doses, excites neither dyspnœa, nor diarrhoea, nor any other injurious symptom. 7th. Sulphate of quina deserves to occupy a principal place in the treatment of many, not to say of all cases of phthisis pulmonalis. 8th. Exclusion or antagonism between tuberculosis of the lungs and intermittent fever, does not exist, unless, perhaps, when by the latter term we understand "feverish dyscrasia."

Dr. Globé concludes his essay, "Something Further on Uræmia," in which he gives a sketch of the history of the group of phenomena comprehend under the term, with the communication of a case in which the functional symptoms of that condition and Bright's disease played a principal part. The patient, a man of 26 years of age, came under treatment with effusion in the left pleura, which had already lasted some weeks. He continued in the same state for above three months, after which time the case assumed all the appearance of uræmia. Although all the distinctive characters of the affection co-existed in all a well-marked degree, the presence of carbonate of ammonia could not be demonstrated either in the expired air, the blood, or any of the secretions. The patient sank in a fortnight from the time the first uræmic phenomena had appeared. On *post-mortem* examination, circumscribed arachnitis was observed on the upper surface of the brain ; there was very great cerebro-spinal effusion ; however, the author is of opinion, that uræmia must be looked on as the principal cause of death, when the condition of the kidneys, which were both found in the second stage of Bright's disease, is taken into account.—*London Medical Times and Gazette.*

On Pure Oxide of Carbon, considered as a Poison. By M. ADRIEN CHENOL.—The facts we are about to communicate relative to the poisonous action of pure oxide of carbon, lead to the following theory :—

As carbonic acid only plays the part of an *obturator*, and as, being a

gas undecomposable at a low temperature, it is incapable of furnishing the oxygen necessary for the combustions which sustain life; it causes death by pure and simple asphyxia ; it is quite otherwise with pure oxide of carbon.

This oxide of carbon, indeed, in contact with the marvellous organs of combustion with which we are endowed, speedily gives rise to the following effects :—It passes to the state of carbonic acid, whence result :—1. Subtraction of oxygen and its consequences ; 2. combustion of this oxygen and its consequences ; 3. formation of carbonic acid and its consequences.

These three effects are inseparable, and the last occasions immediate asphyxia by arresting the action of the lungs and every act of motion. But at the same time, the oxygen has been condensed : whence has resulted an action of compression and of tearing by the vacuum produced ; but, moreover, the conversion of oxide of carbon into carbonic acid has given rise to a disengagement of about 6000 calores per litre of oxygen, burned in the spongiosities of our organisation containing this oxygen, which should have served for enriching the blood.

These 6000 calores, developed in intimate contact and cellules of atoms or small spheres of oxygen, occasion, then, virtually and infallibly, a disorganisation by cauterisation, which causes that violent pain accompanying poisoning with *oxide of carbon*, which differs in this respect from that produced by *carbonic acid*, which, as we have frequently experienced in the mines of Pont-Gebaude, causes an agreeable intoxication, passing by degrees to a sweet lethargy, rather than a painful sensation. Consequently, the study of oxide of carbon as a poison is a subject of much complexity, and of the highest interest in a toxicological point of view.

Facts in support of this Theory.—Contrary to what has been written, the oxide of iron of ordinary combustion is an insufficient reducer, and incapable of removing oxygen from metals of the class of iron. Thus, the theories based on this action are erroneous. This is not the occasion for a discussion of this order. We may here say that this oxide of carbon presents dangers as a poison.

But if the oxide of carbon of combustion, that is to say, that which contains 4, 5, and even 6 volumes of nitrogen, is not a powerful reducer, pure oxide of carbon is not only a reducer of the greatest energy, but a violent poison, even in very feeble doses.

My health has suffered seriously, in consequence of several poisonings by this gas, of which I have made very frequent use, on account of its energetic and peculiar properties as a reducer. I wish, therefore, to obviate, for those who shall follow up my works, the dangers attached to their practice, by pointing out to them this danger in an especial manner.

In 1846, I was at the Marquis of Sassenay's manufactory, at Stolburg, in Prussia, for the purpose of studying the ores of zinc, and their treatment in various points of view, particularly as regards improving the quality of very poor ores, by a system which I had invented, and which consisted in fusing these poor ores in a *cubilat*, closed at the

upper part, and collecting the zinc at different heights in various states of oxidation. In the course of my experiments, I desired to make some investigations concerning the oxide of carbon resulting from the reaction of the oxides mixed with an excess of charcoal. With this view, having no instrument suitable for collecting this gas, I drew it by means of a pipette from the apparatus, and conveyed it under a bell-glass. While I was occupied with this operation, the engineer of the establishment spoke to me, and struck me on the shoulder, without attracting my attention; I then, as it appears, inhaled some of the gas contained in my mouth, and immediately fell on my back, as if stunned.

The following were the external and internal effects of this sudden annihilation of all external faculties described, according to a *proces-verbal*, drawn up by the director, the engineer, and myself, after I had somewhat recovered; and this extract is perfectly in accordance with another accident, of which I will speak presently, and which occurred to me two months ago.

Externally :—1, I fell as if struck by lightning; 2, the eyes were turned back in their orbits; 3, the limbs were contracted; 4, the skin was discolored; 5, the veins were swelled, and presented a black tint under the skin. *Internally* :—1, The sensibility was extreme; life was, so to speak, exalted; all the ideas and principal matters of interest, and all the predominant affections were reproduced to the mind, as in an instantaneous mirror. 2. Violent pains, as if of tearing, were experienced in the thorax. This inward pain was most vivid; the brain felt powerfully compressed, either as a principal action, or as a nervous action, induced by the pain.

Being in this position, I was carried into the air without knowing it, nor did I feel the lotions of water and of vinegar, or the inhalations of ammonia, &c. After a quarter of an hour, external sensation slowly and progressively returned, accompanied by the internal pains already mentioned; but then changing into a sensation of suffocation, attended with cold, and with drops of perspiration all over the body, but especially on the head.

For several days the lassitude was general and continuous, and digestion very bad. Moreover, there was a general disgust for everything. Sleep, from being light, became obstinate and heavy; it was frequently disturbed by cramps in the knees and toes.

For several months after, these effects, although they diminished very much, maintained a marked influence on my health. I was inclined to sadness, faintness, and disgust:—I was alarmed at the noise of any unexpected shock; it produced a nervous shock analogous to an electrical discharge. This state gradually became modified, passing to that of a kind of insensibility which was fixed more particularly at the ends of my fingers, in degrees of intensity varying with the state of the atmosphere. To sum up, it is evident that poisoning with pure oxide of carbon is most terrible in itself, and involves a series of disorganisation.

I am now under the influence of the second poisoning to which I have alluded, and which happened through the sudden breaking of a man-

meter tube, against which I knocked my head in a narrow place. All the internal symptoms were exactly the same, but I was not knocked down. I remained in a state of half consciousness and capable of taking care of myself, according to what I hoped to do, either for others or for myself.

Feeling convinced that the internal derangement resulted from a lesion produced either by the effect which I have just mentioned as regards the theory of the poisonous action of oxide of carbon, I drank for several days, and in as large quantity as I could, gum water and mallowa water. I expected to attain my object as soon as possible. Nevertheless, the disgust, feebleness, and insurmountable inertness continually prevailed ; the insensibility of the ends of the fingers became extreme ; and, by a singular contrariety, not only did shocks cause me to tremble electrically, but a drop of water which fell on my skin, or the slightest touch, even my own, produced a sense of irritation. Bathing seemed to do me much good ; for several hours after, the *calm* was much ameliorated ; but sometimes in the baths, I experienced a kind of general shuddering.

I have addressed these details to the Academy for the sake of general utility, and in order that the medical profession may study the dangers of so terrible a poison, and the curative means to be employed.—*London Chemist, from Comptes Rendus.* No. 16.

On Preserved Meat-Juice.—By ROBERT CHRISITSON, M. D., Prof. of Materia Medica in the University of Edinburgh.—About 18 months ago, when consulted in the case of a relative of Mr. Gillon, the extensive and skilful manufacturer of preserved meats at Leith, I found that the patient was entirely supported in a severe illness, by the Preserved Juice of Meat, which had been given at Mr Gillon's suggestion. Observing the readiness with which it was taken when other food of every kind was refused, I was induced to try it in other instances, and eventually to employ it in various states of disease. The results led me to suggest the use of it to many professional friends, and to advise the druggists of Edinburgh to keep it, so that it is now much in request, and may be easily obtained.

This substance is the pure juice of beef, preserved in the way in which meats and vegetables are now so extensively preserved in the fresh state, for store provisions. The mode of preparation is as follows : Cylindrical cases of tinned iron are filled each with six pounds and a half of beef ; and the lid is soldered on, but with a hole about half an inch in diameter in the middle of it. Two trays of such cases are shoved into iron retorts, analogous in form to retorts for gas-making, but double-cased, so that steam may be introduced into the interstice around. They are thus subjected to a heat of 220° under steam pressure, for about three hours ; by which the beef is partially cooked, and, being thus also made to contract strongly on itself, squeezes out a portion of its juice, amounting to a few ounces from each tin. The tins are then drawn, the juice is poured out, and the meat, with certain additions, is

subjected to the preservative process. The juice, after being cooled and entirely freed from fat, is put into small four-ounce tin cases. Each of these has a small aperture at one end, which is secured by solder, after the juice is poured in. The tins are then subjected, on trays, to a temperature of 220° in a muriate of lime bath. On being removed, the solderer rapidly touches with his iron the solder on top, which giving way allows steam to rush out forcibly, and carry with it the air in the upper part of the interior. By the time he has thus swiftly passed over sixteen or twenty tins, the first is ready for being re-soldered by a similar dexterous application of his iron, which then in succession as quickly secures the whole open and steaming apertures. The process of heating in the bath, tapping and resoldering, is then repeated a second time, to make sure of the thorough expulsion of every particle of air. The tins finally are painted to preserve them against rust.

The process is most perfect. I have repeatedly opened tins eighteen months in my possession, and stated to have been many months in store when I got them, and in every instance the contents had the rich delicate aroma and taste of fresh beef-juice. Sometimes the taste is slightly resinous or soapy, in consequence of a little resin having obtained admission in the operation of soldering. But as this does not occur often, the impurity may be avoided with due care. The juice may be taken with relish in small quantity, either cold or warm, in its concentrated shape; but it is rather strong to be used without dilution. When diluted with three times its volume of boiling water, and duly seasoned with salt and pepper, it makes a more palatable beef-tea than any which can be made in the usual way. Sometimes, indeed, a patient will be found to prefer the ordinary sort, either because the preserved juice has unluckily been resinous, or on the same principle that leads some people from the plains of England to prefer hard water to the pure mountain springs of the primitive districts of Scotland, viz., because they are not accustomed to the finer sort. But this is not the general fact; and there can be no doubt that the preserved meat-juice makes a most palatable beef-tea, and an equally eligible basis for many soups.

Until about ten years ago, in concurrence with general opinion, I used to regard beef tea as a highly nutritive article, not to be rashly or freely given during disease. My sentiments in this respect were shaken, when I ascertained, in the course of some experiments for adjusting the dietaries of the General Prison and the Royal Infirmary, that a pint of the very finest beef tea contained scarcely a quater of an ounce of anything but water. Since that time I have much more readily listened to the cravings of patients for beef-tea in even many acute diseases, and above all in protracted sub-acute diseases, and in chronic diseases with fever; and I have thought I saw that it maintains the strength almost like wine, lessens emaciation and weakness in tedious diseases, and does not occasion any increase of reaction. There is no disease in which these properties are more remarkably shown than in protracted cases of gastric fever, of which by the way, I have seen an unusual number, both in town and country, during the last three years. These cases have often lasted for six weeks, or,—with a relapse, from too early indulgence or exposure,—for the long term of three months nearly: dur-

ing which little, or absolutely nothing else, was taken, except beef-tea or diluted meat-juice; and without the attenuation and debility which so protracted a fever and want of appetite ought to have induced. In some instances I could scarcely doubt that life was preserved by this nutriment. It is unnecessary to particularise the various states of diseases in which the same practice has been followed. It is peculiarly applicable to all subacute protracted diseases, whether febrile or otherwise; and in all such there is even no great reason to hesitate in resorting to it when local inflammation is present. Every one, I think, will be struck with the readiness with which such patients will often take diluted meat-juice or beef-tea repeatedly, when they refuse all other kinds of food. It should be given in the quantity of a teacupful at a time, every four or six hours; but it is well to alternate it with other simple nourishment, when the patient will consent to do so.

What is its mode of action? Not simply nutrient. A quarter of an ounce of the most nutritive material cannot nearly replace the daily wear and tear of the tissues in any circumstances. Possibly it belongs to a new denomination of remedies, whose action never was even suspected to exist until recently—those which, by some peculiar influence, diminish the waste of the tissues under the exercise of their functions. Professor Lehmann has proved (*Annalen der Chemie*, 1853) that coffee possesses this singular property in so remarkable a degree, that in persons following an active occupation an infusion of an ounce of roasted coffee daily will reduce the daily waste by a fourth part; and the same property seems likewise to belong to tea, and other restorative beverages. It is not improbable that the sapid and saline principles of meat, united in what is called ozmazome, and constituting the ingredients of beef-tea and meat-juice, possess some such property. It is difficult otherwise to account for the interesting results obtained by the late Dr. Edwards, in 1833, who, in his researches on nutrition,—strangely overlooked by the celebrated Gelatin Commission of the French Institute, in their condemnatory report on gelatin in 1841,—found that dogs die slowly if fed on bread and gelatin alone, but, when thus greatly reduced, quickly regain flesh and strength by the addition of two ounces of meat-tea, which cannot appreciably increase their textures by its own insignificant amount of solids. Either it acts as a digestive ferment, so to speak,—promoting the assimilation of other nutriment—or, like coffee, it must lessen the waste of the tissues in the exercise of their functions.

Mr. Gillon's meat-juice contains only $6\frac{1}{2}$ per cent. of solids. As a mere nutrient, therefore, it is much in the same category with beef-tea. Sixteen ounces of beef-tea, made with the contents of one tin, yield only 114 grains of solid extract. It contains no fibrin, no albumen, no gelatin. It does not even gelatinise, on exposure to the air for days: it is ozmazome, with the salts and sapid and odorous principles of meat, and materially different from all boiled extracts.

I should add that no good beef-tea could be made so cheap as with this preserved meat-juice. A tin of four ounces makes sixteen of strong beef-tea. This much requires, in the ordinary way, a pound of the finest beef, which at present costs ninepence, and is scarcely ever so

cheap as sixpence. The reason for the cheapness of Mr. Gillon's meat-juice is, that the residual meat is economised, while that of the ordinary cooking process is good for nothing.

It is a much more convenient article for use than any of the extracts made from meat by extemporary processes in the kitchen, or by certain very dubious chemical methods lately come into vogue. It differs materially from all meat extracts prepared by boiling.—*London Monthly Journal of Medicine.*

Abstract of Meteorological Observations for January, 1855, made at Philadelphia, Pa. Latitude 39° 57' 28" N., Longitude 75° 10' 40" W. from Greenwich. By PROF. JAMES A. KIRKPATRICK.

1855. Jan.	BAROMETER.		THERMOM.				Rain. and melted Snow.	Prevailing Winds.	Remarks.
	Daily Mean	Mean Daily Range,	Daily Mean	Daily Range,	Dew Point	Rel. Humid.			
1	30.297	.234	31.3	2.0	29.2	.74		N.E.	Clear.
2	30.484	.187	33.3	2.0	30.3	.80		NE.	Cloudy.
3	30.480	.052	38.3	5.0	35.3	.82		NE.	Cloudy.
4	30.335	.145	44.3	6.0	43.3	.85	0.054	NE.	Cloudy; ev. fog; Rain during night.
5	30.421	.086	40.7	5.0	33.7	.67		N.	M. and ev. cloudy; aft. clear.
6	30.489	.077	41.5	3.2	37.8	.96	0.092	NE.	Rain all day. [highest 62°.
7	30.317	.171	52.3	10.8	52.7	.77	0.106	(Var.)	M. fog; aft. cloudy; ev. rain. Therm.
8	30.586	.268	43.0	12.7	30.3	.57	0.188	(Var.)	M. rain; aft. and ev. cl'y; snow during night, about $\frac{1}{2}$ in. Bar. hig'st 30.610.
9	30.378	.208	36.3	4.0	33.7	.89		N.W.	Cloudy; morning drizzling.
10	30.323	.060	33.7	4.0	24.0	.44		N.	Clear.
11	29.957	.366	31.8	3.5	30.7	.88	0.076	NE.	Cloudy; morning snow.
12	29.745	.212	38.7	6.8	37.7	.90		SW.	M. fog; cloudy.
13	29.517	.228	45.5	8.8	49.7	.84	0.016	(Var.)	M. fog; aft. rain; ev. clear.
14	30.085	.568	21.3	24.2	12.7	.45		(Var.)	Clear.
15	29.993	.094	29.7	8.3	28.0	.69		SW.	Cloudy.
16	29.946	.048	35.7	6.0	28.3	.56		(Var.)	M. cloudy; aft. and ev. clear.
17	29.905	.095	37.3	1.7	35.3	.82		NE.	M. and aft. cloudy; ev. fog.
18	29.654	.251	39.2	3.5	29.0	.51		N.W.	M. cloudy; aft. and ev. clear.
19	29.643	.050	32.7	6.5	19.7	.36		W.N.W.	Clear.
20	29.670	.031	32.8	2.2	25.7	.61		(Var.)	M. and aft. cloudy; ev. clear.
21	29.652	.115	36.7	3.8	33.8	.96	0.529	NE.	Rain all day, very high wind at night.
22	29.540	.296	35.3	8.7	23.3	.53		W.	M. and aft. cloudy; ev. clear.
23	30.015	.475	24.8	10.5	21.3	.76		W.	Clear.
24	29.911	.104	29.5	4.7	27.3	.79	0.071	N.W.	M. Snow, aft. and ev. cloudy.
25	29.858	.054	22.7	6.8	19.0	.65		(Var.)	M. cl'r; aft. & ev. cl'y. Th. lowest 16°.
26	29.236	.622	29.5	7.5	27.0	.84	0.300	(Var.)	Snow during night; day, rain, hail & snow, about 3 in. Bar. lowest 29.163
27	29.556	.320	23.3	6.2	17.8	.58		SW.	Cloudy. [wind during night.
28	29.606	.247	36.7	13.3	31.7	.65	1.169	NE.	M. cloudy; aft. and ev. rain; high
29	29.567	.258	36.5	8.5	31.0	.72		(Var.)	M. fog; aft. and ev. clear.
30	29.904	.337	27.3	9.2	25.3	.78		SW.	M. and aft. cloudy; ev. clear.
31	30.023	.118	25.8	3.2	25.3	.78		W.	Clear.
Means for Jan. 1855	29.971	.206	34.4	6.7	30.0	.72	2.601	N. 17 $\frac{1}{2}$ ° W., 46-100.	
4 yrs	29.959		30.7		30.4	.78	2.193	N. 56° W. 51-100.	

The Monthly Range of the Barometer was 1.447 inch., and of the Thermometer 46°.